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This research described in this report was sponsored jointly by the United States Army, Contract No. MDA903-91-C-0006 and by the United States Air Force, Contract F49620-91-C-0003.

Library of Congress Cataloging in Publication Data

Wilkening, Dean, 1950–
Nuclear deterrence in a regional context / Dean Wilkening, Kenneth Watman.
p. cm.
"Prepared for the United States Army and United States Air Force."
"MR-500-A/AF."
Includes bibliographical references.
ISBN 0-8330-1596-6
1. United States—Military policy. 2. Deterrence (Strategy).
3. Nuclear nonproliferation. I. Watman, Kenneth, 1948– .
II. United States. Army. III. United States. Air Force.
IV. RAND. V. Title.
UA23.W4582 1994
355.02'17—dc20 94-36395
CIP

Published 1995 by RAND
1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
RAND URL: http://www.rand.org/
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Nuclear Deterrence in a Regional Context

Bean Wilkening, Kenneth Watman

Prepared for the
United States Army and the
United States Air Force

Arroyo Center
Project AIR FORCE

RAND

PREFACE

With the Cold War over, U.S. national security strategy has shifted its focus away from the former Soviet Union and toward possible U.S. regional involvements. As a consequence, virtually all the fundamental elements of U.S. strategy, which were developed during the Cold War, should be reevaluated. Among these fundamentals is the role of deterrence. Nuclear deterrence was at the core of U.S. strategy for containing the former Soviet Union, both because the United States believed the Soviet Union was deterrable and because war with the former Soviet Union was unacceptably dangerous. Much of what is called "deterrence theory" was developed specifically for this purpose. With the emphasis shifting to potential conflicts with regional adversaries, the fundamentals of deterrence must be reexamined and reformulated to make deterrence more applicable to regional conflicts. The proliferation of weapons of mass destruction and ballistic missiles brings greater urgency to this issue. Specifically, if U.S. nonproliferation efforts fail and regional opponents acquire nuclear weapons in the future, can these opponents be deterred from using them against the United States, U.S. forces overseas, or U.S. allies?

This document is the second of two reports that attempt to come to grips with these questions. The first report[1] presents a general reformulation of deterrence geared toward potential regional adversaries. The second report applies this reformulation to the specific

[1]Kenneth Watman and Dean Wilkening, *U.S. Regional Deterrence Strategy*, RAND, MR-490-A/AF, 1994.

problem of deterring nuclear attacks by regional adversaries. As such, it should be of interest to policymakers, strategists, and military planners interested in the emerging problem of counterproliferation. Although this report focuses exclusively on regional nuclear threats, many of the ideas presented here should also be applicable to deterring biological or chemical threats.

This research was conducted jointly under the Strategy, Doctrine, and Force Structure program of Project AIR FORCE and under the Strategy and Doctrine program of the Arroyo Center. Project AIR FORCE and the Arroyo Center are two of RAND's federally funded research and development centers.

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SUMMARY

This report examines the broad outlines of U.S. strategies for deterring nuclear use by regional adversaries and, when deterrence may be ineffective, for defeating such threats. It represents an application of the concepts contained in a companion document (Watman and Wilkening, 1994), in which the basic ideas underlying deterrence have been reformulated to make them more applicable to regional conflicts.

Regional nuclear confrontations will involve brinkmanship, i.e., a competition in risk-taking in which the side that is more risk acceptant and that can credibly make sufficiently devastating threats has the upper hand. Credibility, in turn, is determined by the balance of resolve and the balance of power between the contestants.

From this perspective, one can see why regional nuclear deterrence may be difficult for the United States. First, many regional adversaries are willing to take substantial risks because they frequently enter crises out of a desire to avert some loss, e.g., a loss of territory, power relative to external threats, or the regime's hold on domestic political power. This stands in contrast to the risk-averse character of the United States. Second, regional opponents may display considerable resolve because regional crises typically involve their core interests, whereas U.S. regional interests may be more peripheral. Third, nuclear weapons give regional powers the means to inflict substantial costs on the United States—costs that may outweigh U.S. interests in many areas of the globe.

However, acknowledging that regional opponents may be highly motivated does not imply that they cannot be deterred, especially

from threatening nuclear attacks against the United States or its allies. Several advantages belong to the United States. First, U.S. nuclear strategy will not rely on threats to use nuclear weapons first, as it did in extending deterrence to Western Europe against Soviet conventional attacks during the Cold War.[1] Second, U.S. resolve will not always be weak because the United States has long-standing political, economic, and military commitments in certain areas of the world and a reputation for defending these interests. In fact, several regions where nuclear proliferation seems most likely—the Korean peninsula and the Persian Gulf—also happen to be regions where the United States has substantial interests at stake and a track record of defending those interests. As a result, the credibility of U.S. deterrent threats may be quite high, especially in these regions.

Finally, and most importantly for this analysis, the United States has tremendous advantages in military capability, e.g., overwhelming nuclear and, perhaps, conventional superiority and substantial defensive capability relative to the threat in some areas (e.g., theater and homeland air defenses). In the future, the United States may have substantial defensive capabilities in other areas (e.g., homeland and theater ballistic missile defenses and passive defenses to protect U.S. troops and the U.S. civilian population), not to mention substantial counterforce capabilities against an opponent's nuclear arsenal (using conventional or nuclear weapons).

This asymmetry in capability can compensate, to some extent, for an opponent's belief that U.S. resolve is weak—although it is important to note that the opponent may not always perceive U.S. resolve to be weak. For conflicts in which the balance of resolve is roughly equal, a U.S. advantage in capability should yield a decided U.S. advantage in brinkmanship. More difficult cases occur when U.S. resolve appears to be weak (e.g., defending states in Eastern Europe) because then it is more difficult to know whether U.S. military advantages offset an opponent's perceived advantage with respect to resolve.

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[1] A possible exception is U.S. nuclear threats to deter the first use of biological or chemical weapons. In this case the United States would still not be the first to use a weapon of mass destruction, although it would be the first to cross the nuclear threshold.

In contrast to U.S. nuclear superiority, regional nuclear arsenals will be fairly small (on the order of 1 to 10 weapons) and will contain relatively low-yield fission bombs (10 to 20 kt), at least initially. Moreover, credible threats to the U.S. homeland will be relatively difficult to make because of the distances involved. To the extent these threats exist, they will probably involve nontraditional delivery means, at least until these states acquire intercontinental-range ballistic missiles. These points have significant implications for U.S. strategy.

Small arsenals suggest that nuclear weapons will be very precious assets for emerging nuclear powers. Moreover, under most circumstances, a few fission bombs cannot bring about dramatic military results on the battlefield. Hence, regional opponents cannot defeat U.S. or coalition forces, in a tactical sense, using a small number of fission bombs. This implies that, for the most part, nuclear-armed regional opponents cannot credibly threaten to deny U.S. military objectives using nuclear weapons. Instead of deterrence by denial, regional adversaries will most likely follow a strategy of deterrence by punishment, i.e., threatening to inflict costs on the United States that outweigh the interests at stake. Put another way, regional nuclear threats will be made primarily for strategic, not tactical, objectives. Three specific objectives come to mind for an opponent's nuclear threats: (1) deterring U.S. intervention in a regional conflict, (2) intimidating U.S. allies, and (3) intrawar threats aimed at ensuring the regime's survival by deterring U.S. counteroffensives that could topple it.

Having largely dismissed the utility of small nuclear arsenals for warfighting purposes, we should note that regional adversaries might believe that nuclear attacks against a small number of critical military facilities early in a conflict, or special threats, such as high-altitude detonations that produce a significant electromagnetic pulse, could lead to a military victory by interfering with U.S. power projection operations. If so, this becomes an objective for actually using nuclear weapons, as opposed to merely threatening their use. If the United States also believes this is true, threatening such attacks becomes a potential way to deter U.S. intervention—deterrence by denial in this case.

The effectiveness of U.S. deterrent strategies varies depending on the purpose of the adversary's threat. To deter U.S. intervention, regional adversaries will try to convince U.S. leaders that the costs (e.g., expected casualties) will be too high to warrant intervention, given U.S. interests at stake, by threatening attacks against U.S. troop concentrations, airfields, ports of debarkation, and, perhaps, high-value targets in the U.S. homeland. Such threats ought to be relatively easy to deter because the credibility of U.S. threats to retaliate is fairly high once the United States suffers casualties from an opponent's nuclear attack.

In addition, the United States has the capability for "escalation dominance," i.e., an overwhelming capability to respond in kind or to expand the conflict in ways that limit the opponent's ability to respond tit for tat. U.S. counterforce retaliatory strikes are one example. They should be particularly credible to an opponent, even if the effectiveness is less than splendid from the U.S. perspective, because retaliatory counterforce attacks will likely appear to be proportionate after an opponent has used nuclear weapons first. The fact that regional opponents lack equivalent counterforce options against the United States implies that these threats give the United States an asymmetric bargaining advantage. Finally, regional opponents may exaggerate the effectiveness of U.S. counterforce options due to "worst-case" analysis, thus adding to their credibility.

Escalation dominance ought to make most regional opponents pause to reflect on the wisdom of crossing the nuclear threshold first. However, U.S. leaders may still be concerned that deterrence might fail. If so, the United States must develop damage-limiting options, e.g., active and passive defenses, as well as preemptive and second-strike counterforce options. Here the counterforce options must be effective from the U.S. point of view. Damage-limiting capabilities also further enhance the credibility of U.S. retaliatory threats.

If the objective of an opponent's nuclear threat is to intimidate U.S. allies (i.e., coercing allies into denying overflight rights or basing rights, or creating fissures within a U.S.-led coalition out of fear that the allies may come under nuclear attack), the United States can extend deterrence to its regional allies by threatening nuclear retaliation, again relying on escalation dominance. Extended deterrence under these circumstances ought to be credible, particu-

larly if the U.S. homeland is invulnerable to nuclear reprisal. Ensuring the invulnerability of the U.S. homeland provides a rationale for thin U.S. nationwide defenses against air, ballistic missile, and nontraditional threats (e.g., a bomb in the hold of a merchant ship). To reassure U.S. allies that their homelands are relatively invulnerable as well, the United States should develop and deploy theater defenses against all plausible forms of attack.

The most difficult problem for the United States arises if regional leaders threaten nuclear use to limit U.S. war aims, in particular to prevent the United States or a coalition from conducting a counteroffensive that threatens the regime's survival, subjecting its state to unconditional surrender, or imposing such difficult terms as to be the equivalent of unconditional surrender in the view of the adversary. Under these circumstances, a regional adversary's threat to use nuclear weapons first is highly credible. By definition, the adversary has nothing left to lose—assuming the leadership cares more about its hold on power than the welfare of the nation itself. The United States has two basic options for coping with an adversary's nuclear threats under these circumstances. The first is to avoid placing an opponent in a situation where he believes he has nothing left to lose. The downside of this option is that if adversaries believe nuclear weapons force the United States to adopt a "limited aims" strategy, they will have a strong incentive to acquire nuclear weapons.

The second option is to emphasize U.S. damage-limiting capabilities, i.e., highly effective defenses and counterforce options. Reliance on U.S. retaliatory threats alone likely will be insufficient to deter nuclear use by a leader whose regime is about to collapse. Among the benefits of this second approach is that highly effective U.S. defenses and counterforce capabilities (especially conventional counterforce) may discourage nuclear proliferation in the first place because small nuclear arsenals will be rendered essentially useless against the United States and U.S. allies. Under these circumstances, states should be eager to ally themselves with the United States because it will be one of the few countries that can provide effective protection against nuclear coercion. Therefore, acquiring substantial capabilities in all three areas (offensive nuclear superiority, defenses, and counterforce) should not only deter an opponent's threat to use nuclear weapons first, but it should also help dissuade states from ac-

quiring nuclear weapons—although it does not remove all of the incentives a state may have to acquire these weapons.

If U.S. leaders believe these military capabilities are too difficult or too expensive to achieve (at the desired level of effectiveness), regional adversaries have an incentive to acquire nuclear weapons, especially to ensure the survival of their regimes from external threats. The implication of failing to construct an adequate U.S. strategy to deter regional nuclear use is that the United States must then rely on diplomatic mechanisms (e.g., the Non-Proliferation Treaty, export controls) to prevent the spread of nuclear weapons. If nonproliferation efforts fail, as seems likely given recent experiences with Iraq and North Korea, and the United States is unable to mount an effective deterrence strategy, then the United States must learn to live in a world with more nuclear powers, albeit small ones, and must adjust its foreign policy so that regional involvements occur only when very important U.S. interests are at stake.

ACKNOWLEDGMENTS

The authors would like to thank the following individuals for thoughtful comments and discussions regarding regional nuclear deterrence: Marcy Agmon, John Arquilla, Christopher Bowie, Richard Mesic, Brian Nichiporuk, Roger Molander, Russell Shaver, Bradley Thayer, and Nicholas K. J. Witney. Paul Davis and Ashley Tellis deserve a special word of thanks for their thoughtful and thorough reviews of an earlier draft of this document. Of course, credit for any errors or oddities that remain belongs exclusively to the authors.

Chapter One

INTRODUCTION

Deterrence was at the core of U.S. national security strategy throughout the Cold War. In the post–Cold War era, U.S. security policy has developed a regional focus. Deterrence may well become the centerpiece of U.S. regional security strategies, but this is by no means certain because regional adversaries pose different challenges from those presented by the former Soviet Union. In addition, U.S. regional interests are frequently less vital than the interests at stake during the Cold War.[1] The purpose of this report is not to debate the wisdom of different U.S. post–Cold War interests and the "grand strategies" that might be designed to protect them. Instead, the point of departure is to assume that U.S. interests will be engaged in some regions of the world and that, over the next decade or so, the United States will likely come into conflict with adversaries armed with weapons of mass destruction, nuclear weapons in particular. Therefore, one of the important questions for U.S. strategy is how best to deter nuclear threats by regional states.

[1]U.S. interests in Western Europe, Japan, South Korea, and the Persian Gulf will likely remain as strong as they were during the Cold War, although the apparent threat to these interests has diminished with the collapse of the former Soviet Union. However, U.S. interests may be less apparent in Africa, Eastern Europe (e.g., the former Yugoslavia), regions of the former Soviet Union, South Asia, and parts of the Pacific Rim. This is not to say the United States might not find itself involved in conflicts in these regions, just that the reasons for such involvements are less obvious, based on geostrategic considerations. For example, humanitarian concerns, support for UN operations that escalate, or "strategic" rationales that develop in the midst of a crisis may precipitate U.S. involvement for reasons that are hard to appreciate today. After all, U.S. interests in Korea appeared much less than vital to many Americans in 1949, but this did not preclude U.S. involvement in 1950 when North Korea attacked the South.

The objective of this report is to develop the outlines of a coherent U.S. strategy for deterring nuclear threats by regional adversaries against the U.S. homeland, U.S. forces overseas, or U.S. friends and allies. This discussion, although broad, represents the beginning of a more detailed inquiry into the operational and force structure implications of alternative nuclear deterrence strategies.

If deterrence remains an important element of U.S. regional security strategy, it is natural to ask whether the traditional formulation of deterrence is still appropriate. A companion document develops a general formulation for regional deterrence that incorporates an understanding of the character and motivations of potential regional adversaries and uses this to inform the requirements for credible U.S. deterrent strategies (see Watman and Wilkening, 1994). Most of that discussion focuses on conventional deterrence, using history to illuminate and bolster many of the arguments. There is less historical evidence from which one can draw inferences about deterrence when the aggressor threatens to use chemical, biological, or nuclear weapons. Hence, discussions about deterring the use of weapons of mass destruction necessarily rely more on deductive than on inductive reasoning. This report draws on the general ideas discussed in the companion report and applies them to the particular question of deterring nuclear first use by a regional adversary.

U.S. strategy must be designed to cope with a spectrum of regional threats, from purely conventional attacks to attacks using weapons of mass destruction.[2] It is common practice to lump chemical, biological, and nuclear threats together under the rubric of "weapons of mass destruction." This may be rhetorically convenient, but it blurs important distinctions between these different threats that are important for U.S. strategy. For example, passive defenses may be effective against some of these threats but not others. Hence, when discussing U.S. strategy, these threats should be treated separately. This report focuses only on nuclear threats, leaving the discussion of strategies for deterring chemical and biological attacks for a later

[2]Conventional military threats become more troublesome if the adversary possesses weapons of mass destruction because he may be convinced that these weapons provide greater latitude for making conventional threats—under the assumption that weapons of mass destruction will deter intervention by the United States or other major powers.

date. Some of the ideas contained in this report may be relevant to deterring chemical and/or biological threats; however, no attempt has been made here to systematically analyze these threats.

Four scenarios come to mind when thinking about nuclear use: accidental or unauthorized nuclear attacks, nuclear detonations in the context of a civil war (e.g., in the former Soviet Union), nuclear threats from terrorist groups, and intentional nuclear threats between hostile states. While the first three are important for U.S. policy, this report focuses almost exclusively on the last: intentional nuclear threats between states. It is difficult to know whether intentional threats are the most likely scenario for nuclear use in the future; however, it is clearly the scenario where deterrence is most useful. Although nuclear threats by terrorist groups are cause for concern, they are probably less likely than threats from states because they are disproportionate to most terrorists' political objectives. Moreover, strategies for deterring terrorist nuclear threats may share many of the same properties as those for deterring threats from hostile states—at least for large terrorist groups that have state-like characteristics, e.g., the Palestinian Liberation Organization.

It is common these days to hear commentators state that the possession of a few nuclear weapons by a regional adversary changes the entire picture with respect to U.S. regional involvements. The cost, it is claimed, will be too high for the United States to intervene except in defense of the most vital interests. We believe this greatly overstates the inability of the United States to protect important, although less-than-vital, regional interests.

First, it is important to make the obvious distinction between running the risk of nuclear attack and actually suffering a nuclear attack. Many commentators begin their argument by assuming nuclear use has occurred, then examining the costs to the United States. Not surprisingly, they conclude that the costs outweigh any conceivable benefit. This is similar to the conclusion that one was better off being "Red than dead" during the Cold War. But running the risk of nuclear attack is different from being attacked, especially if one has reason to believe that the probability of a nuclear attack is low. The real questions are, what risks are worth taking, and how does one evaluate the risks involved in a particular course of action? These, af-

ter all, were the same questions facing U.S. policy vis-à-vis the former Soviet Union during the Cold War.

Figure 1 illustrates, in a notional manner, the trade-off between expected costs and the U.S. willingness to intervene in regional conflicts, where expected costs are defined as the probability times the magnitude of possible negative outcomes. As U.S. interests become more important, the costs U.S. leaders are willing to absorb in defense of those interests increase. This is represented notionally by the diagonal zone on the right-hand side of the chart. The deeper a given interest is located in the zone, the greater the willingness to intervene.

If U.S. interests are low, i.e., toward the left-hand side of the chart, the United States will intervene only if the expected costs are low.[3]

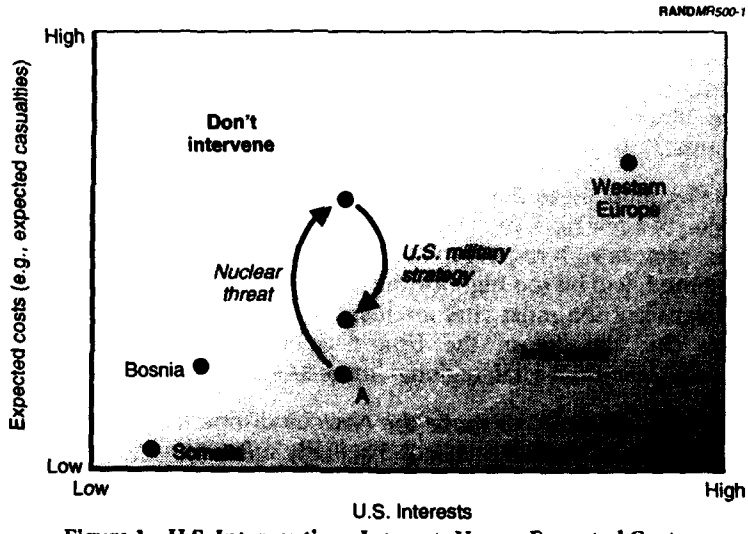

Figure 1—U.S. Intervention: Interests Versus Expected Costs

[3]Of course, if the United States has no important interests in a particular region, one can argue, from the U.S. perspective, that the acquisition of nuclear weapons by a regional power may not be very important—apart from the ripple effects that nuclear acquisition has on neighboring states that may be of greater importance to the United States, or the willingness of a nuclear-armed rogue state to sell its weapons and/or technology to states in other regions where U.S. interests are greater.

The United States was willing to intervene in Somalia for humanitarian goals because the expected costs of confronting the armed factions in Somalia's civil war originally were perceived to be low. Thus, Somalia fell in the shaded zone on the lower left-hand side of Figure 1. Bosnia, on the other hand, would also be located on the left-hand side of the chart, but the likely costs are believed to be too high to justify intervention, at least at the time of this writing. Hence, it would be located on the left-hand side of the chart above the shaded zone, as notionally indicated in the figure. Similarly, the defense of Western Europe throughout the Cold War was believed to be so important to the United States that it was willing to run significant risks (some finite chance of global nuclear war) to defend these interests. Therefore, defending Western Europe from Soviet attack falls in the upper right-hand corner of the chart, within the shaded zone.

The question now becomes, how do regional nuclear threats affect U.S. resolve with respect to other interests? In Figure 1, a notional U.S. interest, e.g., defense of ally A, is represented by the lower dot in the middle of the chart. If a regional adversary acquires nuclear weapons, it can threaten U.S. troops, or perhaps the U.S. homeland, with nuclear attack in an effort to dissuade the United States from intervening. This is represented symbolically in the figure by a vertical shift in the location of the point. The more costly U.S. leaders perceive the regional threat to be, the higher the point moves. Hence, nuclear weapons in the hands of regional adversaries may deter U.S. intervention (i.e., can move the point out of the shaded region).[4]

The important question is whether U.S. military strategy can reduce the expected costs to an acceptable level so that U.S. leaders once again are willing to intervene. That is, can deterrence reduce the

[4]The impact of nuclear threats on the willingness of decisionmakers to commit U.S. forces has been tested in a series of political-military games developed by RAND. These "Day After" games have shown that relatively small nuclear threats cause many game players to question the extent to which the putative U.S. interests at stake in the game are, in fact, vital. For such interests as protecting U.S. access to Persian Gulf oil or defending South Korea, the consensus was that these interests remained "vital" and, hence, would likely lead to U.S. intervention. On the other hand, such interests as preventing a future Indo-Pakistani nuclear conflict were not deemed to be of sufficient importance to justify U.S. intervention if the risk was high that U.S. forces would come under nuclear attack (see Millot, Molander, and Wilson, 1993a,b,c).

likelihood of an attack and/or can damage-limiting capabilities (active defenses, passive defenses, and counterforce capabilities) reduce the expected costs from an attack to such an extent that U.S. leaders are willing to intervene? This is represented symbolically by a downward shift of point A in Figure 1. True, regardless of the military strategy the United States adopts, expected costs will never be as low as they were before the adversary acquired nuclear weapons. However, U.S. strategy might reduce the costs to the point where intervention becomes an option U.S. leaders are willing to entertain (as illustrated in the figure). This should be one of the main goals of U.S. military strategy.[5]

Whether U.S. strategy can be successful is another matter. If U.S. interests are relatively weak, e.g., as they are in Somalia and Bosnia today, U.S. strategy may not be able to reduce the expected costs sufficiently to make intervention seem like a viable option to U.S. leaders. On the other hand, if U.S. interests are strong, as they are in Western Europe, Northeast Asia, the Persian Gulf, and perhaps other areas of the globe, U.S. strategy may well succeed. It is interesting to note that two areas of current proliferation concern—North Korea and the Persian Gulf—are areas in which U.S. interests are widely believed to be fairly strong.

As this report hopes to show, U.S. deterrent threats may be quite effective for reducing the likelihood that an opponent will cross the nuclear threshold first for several reasons. First, U.S. resolve to defend regional interests may not always be weak, as mentioned above. Second, the overwhelming U.S. ability to inflict costs on the adversary implies that the United States could run the risk of regional intervention despite the opponent's nuclear threat because it is hard to imagine a rational leader unleashing a small nuclear attack against the United States. In other words, although the asymmetry of interests in a regional conflict may favor the opponent, it does not

[5]Alternately, U.S. diplomatic strategy might attempt to convince regional opponents that U.S. interests are greater than they at first thought. If so, the opponents' perception of the location of point A moves to the right in Figure 1. This may convince opponents that their nuclear threats will be less effective in deterring U.S. intervention. Similarly, if U.S. leaders come to believe that U.S. interests, as revealed in the course of the crisis, are greater than they at first thought—as has often happened in the past, e.g., the crisis leading up to the Korean War in 1950—U.S. leaders will, in fact, be more willing to intervene.

necessarily follow that this asymmetry outweighs the asymmetry in capability that favors the United States. It is only by weighing the specific interests and capabilities together for each case that one can determine whether the United States can credibly deter an attack, thus making U.S. intervention possible.

Regardless of where one comes out on the efficacy of deterrence, making pronouncements to the effect that few U.S. regional interests, if any, are worth the risk of nuclear attack only encourages potential opponents to threaten U.S. regional interests. Regional leaders can easily interpret such statements as a sign that the United States lacks resolve. For this reason alone, such talk is counterproductive. In dramatizing the threat, perhaps to spur the U.S. government into taking counterproliferation initiatives seriously, pundits impute a deterrent effect to a regional state's small arsenal that they claim the United States cannot create despite its enormous arsenal. Besides being counterproductive, this seems counterintuitive.

The remainder of this chapter discusses the conceptual framework we found useful for thinking about nuclear deterrence. In addition, several general observations are made that help illuminate the problem of regional nuclear deterrence. Chapter Two discusses the objectives regional adversaries may have for threatening the United States or U.S. allies with nuclear attacks. To the extent an adversary believes these threats might be effective, they constitute rationales to acquire nuclear weapons. Chapter Three introduces the military capabilities (i.e., the means) U.S. strategy can harness to accomplish national security objectives (i.e., the ends). No judgment is offered about the technical feasibility of achieving specific capabilities, since our primary interest is in their strategic value. If, upon further analysis, a certain capability appears unattainable, despite its strategic appeal, for cost or other reasons, this report sheds light on the impact this shortfall will have on regional nuclear deterrence. With an understanding of the general military capabilities that are useful, Chapter Four turns to a discussion of credible strategies for deterring the three generic threats discussed in Chapter Two. This report ends with a discussion (Chapter Five) of how these deterrence options affect U.S. counterproliferation policy more broadly.

Regional nuclear deterrence is examined at a high level of generality in this report. Therefore, this analysis does not provide a detailed

prescription for deterring a particular leader, e.g., Kim Jong Il or Saddam Hussein, in a specific scenario. Developing specific deterrence strategies for particular opponents requires more information about the nature of the crisis, the specific motivations of the adversary, the interests and reputation that affect the resolve of each contestant (these may change as the crisis unfolds), and the relative military balance, since this determines the military options available to each side. Nevertheless, this report does illuminate the general character of U.S. strategic options.

THE DETERRENCE PROBLEM

This section describes the framework we found helpful for thinking about regional nuclear deterrence. These ideas are largely deductive in character and follow closely the classic literature on deterrence theory.[6] Broadly speaking, threats can be used to dissuade an opponent from taking some proscribed action (deterrence) or to coerce an opponent into stopping an ongoing activity or reversing an action already taken (compellence). With respect to nuclear threats, the United States is interested more in deterrence than compellence. The interested reader can find a short discussion of the distinction between deterrence and compellence in the appendix.

With respect to deterrence, it is useful to distinguish between nuclear threats against the U.S. homeland and nuclear threats against U.S. forces overseas and U.S. allies. The former is called central deterrence, the latter extended deterrence.[7] For the most part, the regional dimension of U.S. nuclear strategy will be concerned with extended deterrence. Direct nuclear threats by regional states against the U.S. homeland will be less likely because regional opponents will lack long-range delivery capabilities for some time to come. Nontraditional delivery is the only near-term threat, and, while it should be taken seriously, it may be less threatening than many people assume—as discussed below.

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[6]The classic writings on nuclear deterrence include Schelling (1960 and 1966), Brodie (1959), Kaufmann (1954), Snyder (1961), and Kahn (1969). For a review of the evolving character of the deterrence debate, see Jervis (1979).

[7]Central deterrence is synonymous with Herman Kahn's Type I deterrence, and extended deterrence is equivalent to Type II deterrence (see Kahn, 1969, pp. 126–144).

Finally, it is important to distinguish between deterrence by denial and deterrence by punishment (Snyder, 1961). Deterrence by denial attempts to dissuade an adversary from attacking by convincing him that he cannot accomplish his political or military objectives with the use of force, or that the probability of accomplishing his political or military objectives at an acceptable cost is very low. In general, deterrence by denial threatens an opponent's military forces, especially those capable of projecting power beyond a country's borders. As such, it is often referred to as a "countermilitary" deterrent strategy. Deterrence by denial in many respects is similar to the concept of "direct defense," i.e., physically blocking an attack, where the emphasis in deterrence by denial is on dissuading, as opposed to preventing, an opponent from using force against one's interests (see Schelling, 1966, Ch. 1). Because of this, deterrence by denial is frequently confused with notions of "warfighting," as if deterrence is not the real purpose in threatening an opponent's military forces.

Deterrence by punishment attempts to dissuade an opponent from attacking by threatening to destroy that which an opponent values highly—frequently referred to as a "countervalue" deterrent strategy. For example, one might threaten to destroy civilian economic targets if an adversary acts against the deterrer's interests—although punishment can involve a much broader range of targets, such as the civilian population, the top leadership, or select elements of the leadership's political base of power. These "value targets" may or may not include the opponent's military forces. To the extent they do, the emphasis in countervalue deterrent strategies is on threatening to destroy a valued national asset, e.g., a loyal element of the military that helps keep the existing regime in power (i.e., a praetorian guard), as opposed to denying the opponent's ability to accomplish specific political or military objectives through the use of force.

Deterrence by denial and deterrence by punishment are, of course, pure types. Actual strategies incorporate elements of both to varying degrees, depending on which type of threat is believed to be most credible and most effective for a given adversary.

The distinction between countermilitary and countervalue strategies is important for regional nuclear deterrence, because regional nuclear powers typically will be capable of making only countervalue threats against the United States. Under most circumstances, the

few fission bombs that emerging nuclear powers will possess, at least initially, cannot bring about dramatic military results on the battlefield; i.e., they cannot defeat U.S. or coalition forces at the tactical level. This implies that, for the most part, nuclear-armed regional opponents cannot credibly threaten to deny U.S. military objectives using nuclear weapons. Instead, regional adversaries will most likely threaten to attack targets of high value to the United States; i.e., they will rely on a strategy of deterrence by punishment. Put another way, regional nuclear threats will be made primarily for strategic, not tactical, objectives, as will be discussed in Chapter Two. On the other hand, the United States, with its larger nuclear arsenal, can consider a wide range of countervalue and countermilitary strategies to deter the use of nuclear weapons by regional adversaries.

A Conceptual Framework for Nuclear Deterrence

Regional nuclear confrontations will be games of brinkmanship, i.e., a competition in risk-taking, or the manipulation of the shared risk of nuclear war between the United States and a regional adversary. Brinkmanship involves threatening to go to the brink of nuclear attack to accomplish one's objectives without actually crossing the threshold and starting the nuclear war that both sides hope to avoid. The expectation is that the other side will back down. Frequently, an analogy is made between brinkmanship and the game of chicken.[8] Brinkmanship is a dynamic game in which, at different times, each side may be trying to deter or coerce the other. It is not a set-piece interaction where one side is always the challenger, the other the defender (or deterrer).[9] Frequently, each side views itself as the defender, with aggressive motives attributed to the opponent.[10]

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[8]In the game of chicken, two cars speed toward each other, each straddling the center line. The driver that swerves at the last moment to avoid collision loses the game. (See Schelling, 1966, pp. 116–120.)

[9]To minimize confusion we label one side the challenger and the other side the defender or deterrer, even though these labels are value laden. We fully appreciate that, in many crises, it is difficult to determine which side is the challenger and which side the defender.

[10]This is a common theme in the literature on misperceptions in international relations. See, for example, Jervis (1976), Lebow (1989), and Lebow and Stein (1989). For an examination of how misperceptions affected U.S.-Soviet nuclear crises throughout the Cold War, see Betts (1987).

According to the standard deterrence model, the outcome of brinkmanship interactions can be determined by three factors: (1) each side's risk-taking propensities, (2) the credibility of the threats and counterthreats each side makes (i.e., the likelihood that the threats will actually be carried out), and (3) the consequences associated with each side's threats. In the more familiar language of deterrence, deterrence succeeds when the expected costs associated with a threat exceed the expected gains associated with the action the defender wishes to prevent—measured relative to the challenger's status quo.[11] The expected costs are determined, albeit subjectively, by the consequences associated with a specific course of action and the likelihood of suffering these consequences (i.e., the credibility of the retaliatory threat). Deterrence can fail if retaliatory threats are not perceived to be credible, or if, although credible, the threats are not perceived to be sufficiently costly to outweigh the expected gains, particularly when compared to the costs of inaction (i.e., accepting the status quo). With nuclear deterrence, most of the uncertainty surrounds the issue of credibility, since the consequences of nuclear attacks are fairly clear.[12]

Formulating the deterrence problem as a competition in risk-taking helps clarify why regional nuclear deterrence may be difficult for the United States. As discussed in the companion report, regional leaders are often more accepting of risk than is the United States (Watman and Wilkening, 1994). This is because Third World leaders often are motivated to avert some impending loss. This loss may have roots in the regime's domestic political weakness, where the regime's hold on power is at stake. Therefore, regional crises frequently involve a regional adversary's core interests, whereas such crises often are of peripheral interest to the United States. This asymmetry in motivation suggests that regional adversaries will have an advantage over the United States in a game of brinkmanship, all

[11]This standard model has been described in numerous places. See, for example, Russett (1963), Achen and Snidal (1989), and Watman and Wilkening (1994).

[12]This is less true for conventional deterrence because too many imponderables (e.g., shifting alliances, generalship, tactics, unit cohesion, training, logistics support, advanced technology, terrain) obscure one's view of the consequences of conventional threats. Thus, with conventional deterrence, considerable uncertainty may surround the consequences of conventional threats, in addition to their credibility.

other things being equal.[13] Thus, for example, in a game of chicken with a regional opponent who is motivated to avert the loss of his political power, the United States is apt to swerve.[14]

As in all deterrence interactions, deterrent signals must be sent, received, understood, and considered to be of sufficient magnitude by the challenger to be effective. If conflict erupts because the deterrent threats were not made, or not clearly received by the adversary, one has a failure to deter as opposed to a failure of deterrence. Similarly, if deterrent threats are not understood, or are misperceived, deterrence is bound to fail. However, if the signals are sent, received, and their meaning properly understood, the success or failure of deterrence depends on whether the adversary finds the threats persuasive, i.e., believes that retaliation is sufficiently likely that, in light of the consequences, not acting appears to be more attractive than acting—given the challenger's current and prospective status quo.

Although we speak of signaling, threats and counterthreats, and the calculation of costs and benefits, there should be no misunderstanding about the coolness, clarity, and precision with which deterrent

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[13]North Korea presents an interesting illustration of the difficulty the United States has with brinkmanship strategies, although nuclear escalation is not at issue yet. In response to U.S. pressure to open all nuclear facilities to inspections by the International Atomic Energy Agency (to verify that North Korea is not producing nuclear weapons, according to its obligations under the Non-Proliferation Treaty), North Korea increased the number of troops forward deployed along the Demilitarized Zone. While the change in troop strength was not large, it signaled the possibility of a military confrontation if North Korea was pushed too far. In addition, inflammatory rhetoric from Kim Il Sung prior to his death made South Koreans increasingly nervous about the prospect of another Korean War. If strong measures, e.g., an embargo, are taken to pressure North Korea to open suspect sites for inspection, this might create additional hardships that the Kim regime might not be able to withstand, since the country is on the brink of economic collapse. If so, it is possible Kim Jong Il might strike to the south to divert attention from his domestic problems, blaming South Korea and the United States for his internal problems. While this attack would ultimately be futile, it could inflict tremendous damage, especially on Seoul—something most South Koreans want to avoid, given their experience with the first Korean War. Hence, the threat of war from a leader like Kim Jong Il gives North Korea significant leverage to dissuade the United States from pursuing tougher forms of coercive diplomacy.

[14]In the extreme case in which one state has "nothing left to lose" and the other state is a status-quo power, it is not hard to imagine who will lose the competition. Imagine a game of chicken played with one driver who is a convict on death row and another driver who is a man with a family. It is not hard to predict who will swerve.

threats are made and understood. In fact, in circumstances where deterrence involves a shared risk of calamity, in which neither side would deliberately choose nuclear war but both sides are willing to run some risk that nuclear attacks might occur, the uncertainty about what will happen if one state challenges another state's deterrent threat is an irreducible part of deterrence. In these situations, the possibility that events might spiral out of control may be sufficient to deter.[15] In any case, U.S. regional deterrence strategy should aim to reduce the regional opponent's uncertainty about whether the United States is willing to run such risks and increase the certainty that the consequences ultimately will be much greater for the regional state (or much less for the United States).

The relative credibility of threats and counterthreats can be dissected with the aid of Figure 2. The credibility of a deterrent threat depends on whether the challenger believes the deterrer *will* do what he says he will do, i.e., on his perception of the deterrer's intent (resolve and commitment are synonyms[16]), and on the challenger's assessment of whether the deterrer *can* do what he says he will do, i.e., on the deterrer's capability. For a threat to be credible, both intent and capability must be in evidence. Note that capability influences two dimensions of deterrence: the credibility and the consequences of the threat. Here, we focus on the role that capability plays in making threats more believable or credible.

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[15]In the words of Thomas Schelling: "We often talk as though a 'deterrent threat' was a credible threat to launch a disastrous war coolly and deliberately in response to some enemy transgression. The choice is unlikely to be one between everything and nothing. The question is really: is the United States likely to do something that is fraught with the danger of war, something that could lead—through a compounding of actions and reactions, of calculations and miscalculations, of alarms and false alarms, of commitments and challenges—to a major war?" (Schelling, 1966, p. 97).

[16]For the purposes of this discussion, intent, resolve, and commitment are taken to be roughly synonymous. All three terms frequently occur in the literature on deterrence and are often used interchangeably. For example, Schelling entitled a chapter of his book dealing with the techniques by which a state makes threats credible "The Art of Commitment" (see Schelling, 1966, Ch. 2). "Resolve" connotes a greater fixity of purpose than "intent," which refers to a determination to act in a certain way. "Commitment" is similar to "resolve" in that a commitment implies that one is obliged to act in some manner or that one has pledged oneself to a particular course of action. Thus, a state's willingness to act in defense of some interest can be referred to as the state's intentions, its degree of resolve, or its level of commitment.

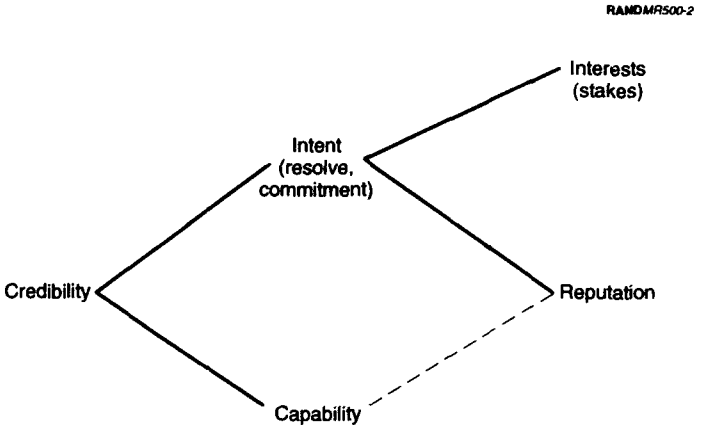

Figure 2—Basic Components of Credibility

To some extent, intent and capability are fungible. If the challenger believes the deterrer's intent or resolve is weak, a particularly clear and compelling capability to do what the deterrer says he will do can compensate, to some extent. Similarly, if the challenger believes the deterrer's capability is weak, a particularly strong resolve can make a deterrent threat appear credible. In the extreme, if the challenger believes the deterrer has no intent of carrying out a threat, all the capability in the world will not make the threat credible. Similarly, if the challenger believes the deterrer would like to carry out the threat but completely lacks the capability, the credibility of the deterrent threat is also zero. In a sense, credibility can be thought of as the product of intent times capability.

The challenger's perception of the deterrer's intent, in turn, depends on two main factors: the challenger's perception of the deterrer's interests in the conflict and his perception of the deterrer's reputation for defending these interests. A defender's reputation may also refer to the capability to carry out specific threats—hence, the dashed line between reputation and capability in Figure 2.

The degree of interest the deterrer has in a conflict obviously affects the deterrer's resolve to defend these interests (Russett, 1963). In general, they can be assessed by asking what a state loses if it backs down in a crisis. Interests frequently can be inferred from visible ties the defender has to the state being defended (Huth and Russett, 1984). These ties may be political (e.g., alliance commitments, or a shared ideology or culture), economic, or military (e.g., troops based on allied soil, or the presence of U.S. military advisors). "Vital" interests are, by definition, those interests central to the survival of the state or the regime governing the state. Resolve is rarely an issue with respect to the defense of these interests. On the other hand, a state's resolve to defend less-than-vital interests is not always clear. To the extent a challenger perceives the defender's interests in a conflict to be low, the challenger will likely draw the conclusion that the defender's resolve to defend these interests will also be low. The United States may face this situation in future regional conflicts. The regional crises with the greatest chance for misperceptions of U.S. resolve will be ones in which U.S. interests are ambiguous. In these, the United States may feel compelled to intervene through a series of events that is hard to predict, while the adversary believes that U.S. resolve will be weak because U.S. interests are not readily apparent. Under these circumstances, deterrence is apt to fail. The Korean War comes to mind as an example.

Reputation is the second aspect of intent or resolve. There are several facets to reputation. One is the reputation a state has for acting in defense of specific interests. Whether or not a state has a good reputation in this regard, leaders frequently believe they must act to avoid undermining their reputation in the future. For example, the belief is frequently held that a damaged reputation undermines alliance cohesion and encourages future encroachments by one's adversaries. Thus, leaders often act as though commitments are interdependent.[17]

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[17]Acting to prevent damage to one's reputation, i.e., to save face, strikes many as a poor reason to run the risk of war. On the other hand, defending or creating a reputation with respect to the defense of particular interests may be one of the best ways to ensure these interests are not threatened. Elli Lieberman argues that Israel's reputation for successfully defending itself in a series of Arab-Israeli wars prior to 1968 caused the Arab states (Egypt in particular) to modify their strategic objectives with respect to Israel. Ultimately, he argues, this was a key factor in the emergence of peace-

A second facet of reputation is the personal reputation of the leadership. Leaders with a reputation for being ruthless or irrational may be able to make a wider range of threats appear credible than a cautious, level-headed leader can. This is the idea behind leaders who act a bit crazy or out of control. President Nixon was said to have tried to convey the image of being a bit out of control in bombing Hanoi to convince North Vietnamese leaders to return to the negotiating table. Similarly, Kim Jong Il, the son of Kim Il Sung (the late ruler of North Korea) has a reputation for erratic and cruel behavior. Whether this characterization is accurate or not, the perception that this is so could give Kim Jong Il an advantage in a game of brinkmanship with South Korea or the United States, e.g., by threatening to attack Seoul, even if such threats appear irrational to U.S. leaders.

A third aspect of reputation is the reputation a state has for being able to accomplish specific military operations. This is a reputation for a capability and, hence, belongs on the capability side of the credibility ledger. A reputation for a specific capability, e.g., being able to conduct effective combined-arms operations, achieving air superiority rapidly, inserting armored forces into a region promptly, or conducting effective counterinsurgency campaigns, alters the challenger's perception of the credibility of the deterrer's threats.

Reputation, however, appears to be a limited source of resolve, because it is specific to the circumstances and interests that created it (Watman and Wilkening, 1994; Huth and Russett, 1988). In other words, states do not appear to have a general reputation that carries over from one crisis to another, unless these crises are between the same actors and involve similar interests. Thus, one should not be surprised that the reputation the United States acquired for defending oil interests in the Persian Gulf in 1991, or for the military capabilities demonstrated in Operation Desert Storm, has not influenced the perception of U.S. resolve in Bosnia, Somalia, or Haiti.

Again, the analogy with the game of chicken is informative. In chicken, the driver with the greater resolve not to swerve has an ad-

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ful coexistence in the region (Lieberman, 1994). In the words of Thomas Schelling, "If the question is raised whether this kind of 'face' is worth fighting over, the answer is that this kind of face is one of the few things worth fighting over." (Schelling, 1966, p. 124.)

vantage. This might be communicated by demonstrating that he has greater stakes in winning the game or that he has a reputation for not swerving in past games. Throwing the steering wheel out of the window is an interesting tactic to convince the other driver that he must swerve to avoid collision. Similarly, capability can compensate to some extent for the perception of weak resolve. For example, the driver of the larger car, or the car with seat belts (i.e., passive defenses), will have an easier time convincing the opponent that he will not swerve, because, although his car will be damaged, the consequences of a collision will be greater for the driver of the smaller car or the car without seat belts.

Besides interests and reputation, two lesser factors—bargaining tactics and perceptions of legitimacy—also influence the perception of a state's resolve to act in defense of some interest. To some extent, these factors simply amplify the perception of interests and reputation discussed above. However, they also can be quite distinct. Hence, they are mentioned separately.

Thomas Schelling was the first to articulate a long list of bargaining tactics important for deterrence (Schelling, 1966, Ch. 2); among them are the following:

- The "rationality of irrationality," i.e., convincing an opponent that a threat will be carried out even if it hurts the defender (this could be an aspect of the leadership's reputation)
- Convincing an opponent that he has the "last clear chance" to avoid the confrontation (this involves relinquishing control over events, for example, by making retaliation automatic if the proscribed action occurs)
- Tactics by which a defender "identifies" itself with the state to be defended, so an attack upon the ally appears to the challenger as an attack on the defender. Most of these tactics involve creating visible ties that bind the defender to the state being defended, for example, deploying U.S. troops on allied territory or signing a mutual defense treaty
- Clear public declarations of one's intent to defend an ally, which makes it hard to back down from the commitment without in-

curring some damage to one's reputation (i.e., tying one's hands to some extent).

The extent to which these tactics can be effectively employed by the leaders of a state is debatable. Nevertheless, one should at least be aware that the tactics used in making threats and counterthreats at the brink may substantially influence their credibility.

The perceived legitimacy of the defender's interests or of his methods of defense is more difficult to determine.[18] Nevertheless, if the challenger believes the defender's claim to some interest is legitimate or that his own claim is less legitimate, the challenger is likely to believe the defender has greater resolve in defending that claim. For example, major powers frequently believe the status quo is legitimate. The challenger may not share this belief. However, if the challenger understands that major powers believe this to be true, the challenger is likely to believe they will have greater resolve to uphold the status quo. Note that this does not require the challenger to agree with the legitimacy of the defender's claim, only that he believe the defender believes in the legitimacy of the claim. Frequently, brinkmanship maneuvering is designed to increase international perceptions of the legitimacy of one side's cause in a conflict and to decrease the perception of the opponent's legitimacy. An attempt to label the opponent as the "aggressor" and oneself as the "defender" in a crisis is an obvious example.

The notion of legitimacy can also be applied to the methods used to defend interests. Certain types of weapons (e.g., chemical, biological, and, under some circumstances, nuclear weapons), or certain types of warfare (e.g., terrorism) may not be perceived by the international community to be legitimate for advancing a state's interests. To the extent this is true, threats to use these weapons will not be perceived to be legitimate. For example, if the international community believes that chemical and biological weapons are not legitimate weapons for warfare (as suggested by the 1925 Geneva Accords, the 1972 Biological and Toxin Weapons Convention, and the 1991 Chemical Weapons Convention), a state that threatens to use chemi-

[18]For a discussion of the concept of legitimacy and its influence on international behavior, see Bull (1977), although the use of the concept of legitimacy in this report is somewhat different from Bull's.

cal or biological weapons first will have more difficulty convincing the defender of its resolve, since the defender will tend to dismiss such threats as illegitimate. Put another way, the challenger, knowing that the defender believes chemical or biological attacks to be illegitimate, will likely believe the defender's resolve to deter such threats, even if the defender's threats are escalatory in character. For example, the defender may have greater international sympathy for making strong counterthreats. Again, note that the challenger does not have to agree with the defender's perspective that certain means are not legitimate. All that is required is that the challenger believe the defender holds this belief.

Following this line of thought, the United States should consider establishing a ban on the first use of any weapon of mass destruction. This helps render the first use of weapons of mass destruction illegitimate, though not necessarily the possession of these weapons for deterrence. Such a regime, or "norm of no first use," may not make the acquisition of chemical, biological, or nuclear weapons less attractive to regional opponents, but it would help undermine a regional state's resolve to cross the weapons-of-mass-destruction threshold first, because the opponent will likely believe the United States will be less inhibited in responding to what the international community believes to be an illegitimate act.

Thus, an "illegitimacy norm" covering a particular type of weapon does not necessarily convince adversaries to abolish their arsenals of illegitimate weapons by convincing them that such weapons should be eliminated. Rather, it is intended to convince them that other states regard certain weapons or operations as anathema. To the extent an opponent believes this, a threat to use an illegitimate weapon will have less coercive leverage because the threat of retaliation by those who oppose the use of such weapons is more credible. Thus, the utility of establishing international norms against the use of certain weapons or types of warfare is not to convince the world of the rectitude of one's moral stance but rather the pragmatic utility of undermining the coercive power of such threats.[19]

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[19]Quester and Utgoff (1994b) have suggested a related proposal: no first use of nuclear weapons without prior consultation with the UN Security Council. Among the benefits of such a proposal are the delegitimization of nuclear first use when the UN Security Council is not consulted, as seems likely if a rogue state contemplates nuclear

The capability dimension of credibility is easier to understand. Here capability simply refers to the military capability to carry out a specific threat. This could be a threat to deny the adversary's ability to accomplish some objective (e.g., conquer an ally's capital), or it could be a threat to inflict some costs or punishment on the adversary that outweigh the benefits to be gained by acting (in light of the costs of inaction). Whether the military capability is for denial or punishment, the adversary must believe the deterrer can do what he says he will do in order for the threat to be believable. If the exact retaliatory threat is left ambiguous, as often is the case, the challenger must believe the deterrer has sufficient capability to carry out a range of sufficiently costly potential responses to be deterred. As discussed above, the defender's reputation for a specific capability helps bolster credibility.

In summary, the credibility of a state's threats or counterthreats in a game of brinkmanship is determined by the perception each side has of the relative resolve and capability that can be brought to bear in the crisis. The perception of relative resolve is determined, in turn, largely by the perception of the balance of interests and by the reputation of the contestants. Besides interests and reputation, the legitimacy of each side's claims, the legitimacy of the methods used to defend these interests, and the deftness with which bargaining tactics can be brought to bear will also have an impact on the perception of resolve. If one side has an advantage with respect to resolve, the other may still be successful at brinkmanship if it has advantageous military capabilities that make its threats appear sufficiently credible.[20]

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first use, and the legitimization of nuclear retaliation if this response is sanctioned by the Security Council. It is less clear how this proposal affects biological or chemical first use. Most states, the United States among them, have eschewed biological and chemical arsenals. Consequently, many of these states may rely on nuclear retaliation to deter biological or chemical first use. If an aggressor believes the UN Security Council will equivocate when considering nuclear retaliation to deter biological or chemical attacks, then deterrence of these threats is weakened.

[20]This characterization of brinkmanship is similar to Richard Bett's "balance of interest" and "balance of power" approaches to understanding nuclear crises between the United States and the former Soviet Union throughout the Cold War. The major difference in this approach is that interests are viewed as one determinate of resolve; and resolve and capability (power) are viewed as two facets of credibility, as opposed to being separate "theories" or general explanations of international behavior as in Bett's view (Betts, 1987, Ch. 4).

Finally, a word about the third component of successful brinkmanship threats: the consequences associated with each side's threats. As discussed at greater length in the companion document (Watman and Wilkening, 1994, Chapter Two), military capabilities influence two parts of the deterrence equation: the likelihood that retaliation will occur (i.e., credibility, as discussed above) and the magnitude of the consequences or costs associated with the retaliatory threat. The latter obviously is important because it is the product of the probability times the consequences, i.e., the expected consequences, that deters. The more negative the consequences, the greater the deterrent impact of a threat—unless the consequences are so extreme (i.e., disproportionate to the act) that they diminish the credibility of the threat. Tailoring the magnitude of retaliatory threats to make them both believable and sufficiently costly is part of the art of deterrence.

Basic Approach to U.S. Regional Nuclear Deterrence

With this framework for understanding regional nuclear confrontations, it is easy to see why the United States may frequently be at a disadvantage. Not only may regional adversaries be willing to tolerate higher risks because they are seeking to avert some loss, but the "balance of interests" may also be in their favor, if for no other reason than geographic proximity. This is not necessarily true if vital U.S. interests are at stake. However, many regional crises may involve less-than-vital U.S. interests. Hence, regional opponents may believe U.S. resolve is weak.

If the stakes and risk-taking propensities favor regional adversaries in games of brinkmanship, how can the United States construct a strategy to deter such opponents effectively? Two approaches suggest themselves. One is to strengthen the adversary's perception of U.S. resolve by strengthening the perception of U.S. interests in the region, the legitimacy of the U.S. cause, and the U.S. reputation for coming to the defense of these particular interests. These are areas for creative U.S. diplomacy and subtle bargaining tactics.

However, as discussed in the companion report, the perception of interests is hard to create overnight. Typically, political, military, and economic ties must be established over a long period of time to appear credible. Similarly, reputation may be a weak source of U.S. re-

solve because reputation tends to be specific to the circumstances that created it (i.e., it is not easily generalized), and it decays rapidly with time (see Watman and Wilkening, 1994, Chapter Four; Huth and Russett, 1988; and Huth, 1988). Therefore, while there is room for creative diplomacy to buttress the perception of U.S. resolve or commitment, the most effective way to strengthen the credibility of U.S. threats, as well as the consequences associated with these threats, is to influence the opponent's perception of U.S. military capabilities so he becomes convinced the United States *can* respond effectively if he attacks the U.S. homeland, U.S. forces overseas, or U.S. allies. Thus, the approach taken here emphasizes asymmetric U.S. military advantages to compensate for what frequently may be the opponent's perception of a weak U.S. commitment or resolve.

If regional threats are conventional, the local conventional military balance is the most salient dimension of military capability for deterrence. Nuclear weapons are discounted because their use against a nonnuclear adversary does not appear to be credible. Hence, U.S. military capabilities for deterring conventional aggression should focus on prompt denial using U.S. conventional military forces (Watman and Wilkening, 1994, Chapter Five). Threats to punish the opponent using conventional attacks may also be important. In this regard, threats against the leadership itself or against the support elements upon which the regime depends for its survival become high-value targets—on the assumption that many totalitarian leaders care more about their own survival and their hold on power than about the welfare of their populations.

On the other hand, if regional adversaries threaten to use nuclear weapons first, the above conclusions need to be modified. First, U.S. nuclear retaliation will not be discounted by regional adversaries because, after an opponent uses nuclear weapons first, U.S. nuclear retaliation may be quite credible. For example, few leaders believe the United States would not respond with nuclear weapons if the U.S. homeland were attacked with nuclear weapons first. This might be less true if U.S. troops overseas were attacked with nuclear weapons (and less true still if an ally were so attacked), but, as we will argue later in this report, a U.S. nuclear response can be credible even here. Of course, the opponent hopes to use nuclear threats to coerce the United States or U.S. allies without ever having to launch a nuclear attack. The purpose of U.S. retaliatory threats is to make the

probability that an opponent would ever cross the nuclear threshold first very low.

GENERAL OBSERVATIONS ABOUT THE PROBLEM

The Limited Character of Regional Nuclear Threats

The United States will have substantial nuclear superiority in most regional conflicts. Conflicts with China and Russia are the only exceptions. But for conflicts with such states as a nuclear-armed Iraq, Iran, Libya, North Korea, Pakistan, or even India, the nuclear balance will be extremely advantageous to the United States. The effects of that advantage are suggested by the U.S. experience in the early 1950s, a period when a similar advantage existed with respect to the former Soviet Union. During that period, the United States threatened a declaratory policy of "massive retaliation" to deter virtually any form of Soviet aggression. In particular, few people questioned the credibility of extended deterrence to Western Europe or other U.S. allies in the early 1950s for two reasons: the advantage resulting from overwhelming U.S. nuclear superiority and the relative invulnerability of the U.S. homeland to Soviet retaliation.

The U.S. nuclear advantage over regional adversaries is, and will likely remain, far greater than it was over the former Soviet Union in the early 1950s. First, emerging regional nuclear arsenals will be small—initially containing on the order of 1 to 10 weapons, and probably fewer than 50 weapons for the first decade or two of the programs' existence. The reason for this is largely cost, particularly for Third World states. The argument here is not that total program costs are necessarily prohibitive, though they are quite high, but rather that the cost of building a high-volume nuclear weapon production complex will be prohibitively high.[21] Indigenous nuclear

[21]As a general proposition, nuclear weapon programs are very expensive for Third World countries, although a state with advanced scientific and engineering talents may be able to cut the costs substantially, as South Africa's nuclear weapon program demonstrates. For example, the total cost of Iraq's nuclear weapon program has been estimated at around $5 to 10 billion, employing on the order of 7,000 scientists and 20,000 workers from 1981–1991. At any one time, the peak workforce was around 10,000 employees total (see Davis and Kay, 1992, p. 21). On the other hand, South Africa's nuclear program only cost on the order of $1 billion and employed a total of around 1,000 people over a 10-year period, with a peak workforce of approximately

weapon programs (e.g., North Korea's) start with small nuclear reactors for producing plutonium and small reprocessing plants to extract this material from the reactor cores, or small isotope-separation plants for enriching U^{235}. The cost and technological risk associated with larger plants are prohibitive because of the need to acquire the necessary experience operating these complex facilities and because of the high construction cost of larger facilities. Therefore, the production capacity of indigenous programs tends to be small, at least initially. Hence, their arsenals are also quite small.[22] The upshot is that nuclear weapons will be very precious assets to most Third World regional leaders.[23]

Second, regional nuclear arsenals will likely consist of fission weapons with yields on the order of 10 to 20 kilotons. For example, South Africa's arsenal consisted of six fission bombs using highly enriched U^{235} and a relatively simple gun-type detonation mechanism. The yield of the weapons was estimated to be in the range of 10 to 18 kilotons (Howlett and Simpson, 1993, pp. 156–157; Zimmerman, 1994, pp. 75–78). "Boosted" fission weapons and fusion weapons (with yields 10 to 1000 times larger) would probably take the better part of a decade or more to develop after the initial success with fission weapons—unless nuclear weapon design information is leaked from the former Soviet Union.

Hence, the physical threat posed by regional nuclear powers will be quantitatively very different from that to which the United States became accustomed during the Cold War. Most of the images people have about nuclear war, colored as they are by 35 years experience with a large Soviet nuclear threat consisting of thousands of mega-

400 at any one time (see Zimmerman, 1994, pp. 77–78). Obviously, another way to cut program costs is to hire former Soviet nuclear weapon scientists, or to buy fissile material through covert channels from the former Soviet Union, if not the weapons themselves.

[22]The prospect that nuclear weapons, special nuclear materials, and/or nuclear design expertise may be purchased or stolen from the former Soviet Union raises a potentially low-cost way to acquire nuclear weapons that was not present before. However, weapons acquired in this manner will also lead to small arsenals containing at most a few weapons.

[23]This is less true for a number of technologically advanced states (e.g., Japan, Germany, South Korea, Taiwan), should any of these states decide to acquire nuclear weapons. In this case, a substantial nuclear arsenal may be developed on relatively short notice (perhaps on the order of several hundred weapons within 5 years).

ton-sized thermonuclear weapons, are inappropriate for regional nuclear threats.

A regional nuclear adversary, if it delivers a single 20 kt fission weapon on target, may inflict substantial losses on U.S. or allied troops (if they are in a concentrated formation at the target location), destroy a large part of a port or airfield, sink a major U.S. capital ship (e.g., an aircraft carrier), contaminate an area on the order of 100 square miles (a cigar-shaped region approximately 3 miles wide and 40 miles long) with lethal doses of radioactivity for a period of several weeks, or inflict on the order of 10,000 to 200,000 civilian fatalities if the weapon detonates in or near a major urban area.[24] However, if U.S. forces are properly deployed, an adversary with a small number of fission weapons cannot physically destroy a U.S. Army division, physically halt all U.S. tactical air operations within a theater, or sink a carrier battle group, much less assure the destruction of U.S. or allied societies. Nuclear weapons are powerful, but not that powerful. Only with arsenals closer in size to those of the United States and the former Soviet Union—arsenals consisting of thousands of "boosted" fission weapons or fusion weapons for the most part—can one plausibly threaten the complete destruction of a large country like the United States. Regional nuclear threats will be on the order of ten thousand times less severe (measured in total equivalent megatons) than the threat posed by the former Soviet Union throughout the Cold War. For the purpose of designing an appropriate U.S. deterrence strategy, it is important to recognize that regional nuclear threats will be in a different class from the threat posed by the former Soviet Union.

Finally, as noted above, most regional adversaries will have difficulty threatening the U.S. homeland with nuclear attack. It will be years before they have intercontinental-range ballistic missiles or bombers, especially ones that can survive a U.S. preemptive conven-

[24]Estimates of the area contaminated with lethal doses of fallout are notional. The estimate in the text is based on 300 rems total dose over a 2-week period following a 20 kt fission detonation close to the ground using a 15 mph average wind speed. Actual fallout patterns vary significantly depending on the weather (e.g., wind speed, rain, wind sheer) and the terrain. In addition, the total radioactive dose one absorbs depends on the time one spends in the fallout zone, the degree of radiation protection, the extent of decontamination activities, and the amount of radiation that might be ingested or inhaled (the above estimate is for external radiation exposure only).

tional counterforce attack. Nontraditional delivery—for example, a bomb in the hold of a merchant ship that docks at a major U.S. port, civilian airliners, or covert means of emplacement—are physically possible and, therefore, should be taken seriously by U.S. defense planners. However, the operational difficulties of implementing such threats are often ignored. The capability is not what is in question here, but rather the willingness of regional leaders to take the risks involved.

Many nontraditional delivery schemes take weeks or months to implement (e.g., merchant ships or covert emplacement). Others, although rapid, are easily countered (e.g., eliminating or monitoring civilian air traffic that originates from countries making a threat). One must ask whether regional leaders will trust a small group of supposedly loyal people to take one of the regime's most precious military assets and embark upon a voyage to deliver this weapon to the U.S. homeland some weeks or months later. What assurance does the leader have that the members of the group will remain loyal? What are the chances that the plot will be discovered, or that something will go wrong during the long period after the weapon has left the country and is ready to detonate in the United States? What command and control arrangements will suffice to convince the leader that the weapon will detonate only when authorized and not accidentally or in an unauthorized manner? And, if the threat to detonate such a weapon successfully deters the United States from taking some action, what chance is there that the weapon could be retrieved after the crisis is over? Given the tight centralized control over nuclear weapons that one would expect from emerging nuclear states and that has been observed in all new nuclear states to date (especially opaque nuclear proliferants), these risks may be too great, considering how precious these nuclear weapons will be.[25] With less precious weapons, e.g., chemical or biological weapons or a nu-

[25]For a discussion of command and control arrangements that emerging nuclear powers are likely to have, see Feaver (1992). His basic hypothesis is that command and control will be highly centralized. This seems intuitively reasonable, given the desire for extreme secrecy in covert nuclear programs, and is consistent with published descriptions of the Israeli nuclear program (see Hersh, 1991), South Africa's nuclear weapon program (see de Villiers, Jardine, and Reiss, 1993, and Howlett and Simpson, 1993, p. 157), and North Korea's military command and control system in general (see Bracken, 1993).

clear arsenal containing many tens of weapons, the risks associated with nontraditional delivery may be less inhibiting.

Obviously, one cannot determine with precision how likely nontraditional delivery schemes might be. However, raising the operational problems associated with such threats suggests that nontraditional delivery, while an important potential threat, may not be as likely as many people seem to think. As a result, the U.S. homeland may be relatively invulnerable to regional nuclear threats for some time to come. This has important implications for U.S. strategy.

The scarcity of nuclear weapons implies that they will be very precious assets to regional leaders. Therefore, regional nuclear threats will be primarily strategic in character, not tactical. Regional adversaries will most likely use nuclear threats to "shape" the conflict at the political or strategic level, as opposed to simply enhancing the battlefield effectiveness of their forces. In short, countervalue threats are the most likely type of threat. After all, this was exactly how the United States used its two nuclear bombs in August 1945. There is little evidence to suggest that regional adversaries, armed with a small number of nuclear weapons, could defeat U.S. or coalition forces directly. On the other hand, regional nuclear threats may dissuade the United States from intervening altogether, disrupt the formation of a coalition, or delay the introduction of U.S. or coalition forces into the region. If an adversary believes his political and military objectives must be accomplished quickly, as is often the case, delays in the arrival of U.S. forces may be critical to the success of an attack.

Having largely dismissed the utility of small nuclear arsenals for warfighting purposes, one should note that regional adversaries may believe that nuclear attacks against a small number of critical military facilities early in a conflict, or special threats, such as high-altitude detonations that generate an intense electromagnetic pulse, could lead to a military victory by interfering with U.S. power projection operations. If so, this becomes an objective for actually using nuclear weapons, as opposed to merely threatening their use. If the United States also believes this is true, then threatening such attacks becomes a potential way to deter U.S. intervention—deterrence by denial in this case.

The Question of Nuclear First Use

A second important point to keep in mind when thinking about conflicts between the United States and a nuclear-armed regional opponent is that, in most circumstances, the United States will not be the country to threaten nuclear first use because of the preponderance of U.S. conventional military capabilities. By containing future conflicts at the conventional level, the United States ought to retain a military advantage. This seemingly small point has enormous implications for U.S. strategy.

Recall that, during the Cold War, the U.S. strategy of extended deterrence in Western Europe relied on nuclear first use to help deter a massive Soviet conventional attack. In the late 1950s, when the former Soviet Union developed the capability to strike the U.S. homeland with nuclear weapons, nuclear first use became increasingly incredible because it was predicated on a fundamentally irrational threat—that the United States would escalate to nuclear first use to defend Europe even though this could lead to the destruction of large parts of the United States in retaliation, an outcome U.S. leaders undoubtedly cared more to avoid than the loss of Europe. The problem of credibly extending deterrence to U.S. allies, when the former Soviet Union had substantial retaliatory capability that could strike the U.S. homeland, was one of the most difficult strategic problems the United States faced during the Cold War. The strategy of "flexible response" only partially solved this credibility problem. Until the end of the Cold War, the U.S. strategy of extended deterrence was never highly credible, relying instead on "a threat that leaves something to chance" or the "rationality of irrationality." Nevertheless, this strategy was thought to be sufficient, given the risk-averse character of the former Soviet Union and the vital U.S. interests at stake.[26]

Against nuclear-armed regional powers, the United States no longer needs to rely on threats to use nuclear weapons first. Moreover, in

[26]For a good discussion of U.S. nuclear strategy throughout the Cold War, see Freedman (1989), Friedberg, (1980), Slocombe (1981), and Miller (1984).

many situations, the U.S. homeland will be relatively invulnerable to attack by regional powers. These differences substantially ease the credibility requirements for extended deterrence. The burden of crossing the nuclear threshold first will rest with the opponent.

This argument breaks down in two situations: when the opponent threatens chemical or biological attacks (before or instead of nuclear attacks) and when insufficient U.S. conventional force is sent to a region and these units are threatened with annihilation due to superior local forces.[27] The United States cannot respond in kind against chemical or biological threats, because it has agreed to dismantle all of its chemical weapons under the Chemical Weapon Convention and it no longer possesses biological weapons. In these cases, the United States may wish to retain the option to use nuclear weapons first, especially if these chemical or biological threats are directed against unprotected urban areas. If chemical or biological attacks are directed against troops equipped with passive defenses (e.g., Mission-Oriented Protective Posture (MOPP) gear, vaccines, antibiotics, and decontamination equipment), the expected casualties may be fairly low—assuming adequate warning of the attack and relatively short exposure times (i.e., a few days). If so, the United States could rely on conventional retaliatory threats to help deter these threats or it could simply ignore them.

If nuclear threats are retained to deter chemical or biological attacks, the United States could still adopt a policy of "no first use of weapons of mass destruction." This leaves pure conventional threats out from under the umbrella of nuclear deterrence. If, in the midst of a conventional conflict, a major U.S. combat unit is about to be overrun, a U.S. president might wish to threaten nuclear attacks to save this unit. The credibility of such threats would be diminished if the United States categorically eschews nuclear first use under any circumstances. On the other hand, this scenario may not be sufficiently important (or likely) to justify rejection of a "no first use of weapons of mass destruction" declaratory policy, especially if there are clear political benefits to be derived from a no first use pledge, e.g.,

[27]A similar line of argument regarding the disadvantages of a strict "no-first-use" policy can be found in Quester and Utgoff (1994a).

strengthening the norm that the first use of nuclear, biological, or chemical weapons is illegitimate.[28]

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[28]It is often assumed that a no-first-use pledge will strengthen U.S. nonproliferation policy by demonstrating a willingness to delegitimize nuclear use. Perhaps. But it is quite likely that such a pledge would have little impact on the proliferation incentives of other countries, since such incentives are based largely on regional security concerns and not on U.S. nuclear policy. Hence, although a no-first-use pledge would give the United States the rhetorical "high ground," it probably would not significantly influence the proliferation incentives of other states.

Chapter Two

WHY REGIONAL STATES MIGHT ACQUIRE NUCLEAR WEAPONS

Regional states might acquire nuclear weapons for several reasons. Prestige and economic spin-offs are possible motives. With respect to North Korea's nuclear program, one might argue that acquiring nuclear weapons as bargaining chips is another possible motive. Regardless of signs that North Korea may be willing to relinquish its nuclear weapon program, according to the recently signed U.S.–North Korean nuclear accord, this argument probably overstates the extent to which this motivation was present at the program's inception. Selling nuclear expertise, if not materials, to acquire hard currency may come closer to the truth. In any case, concern for a state's security is likely to be the dominant motive for nuclear proliferation.[1] States will likely acquire nuclear weapons to deter attacks against their homelands or to intimidate their neighbors.[2] Since the focus

[1]For a discussion of the different incentives states have to acquire nuclear weapons, see Meyer (1984) and Potter (1982). For a more recent discussion from different theoretical perspectives, see Davis and Frankel (1993). For an interesting attempt to model the decisionmaking of leaders faced with the choice of whether to "go nuclear" or not, see Arquilla and Davis (1994).

[2]The South African nuclear program reveals an interesting variation on the traditional deterrence rationale for acquiring nuclear weapons. Unlike the traditional view that nuclear weapons deter attacks because of the threat they pose to the adversary, South Africa's nuclear strategy appears to have been designed around the belief that revelations about its nuclear program in the midst of a crisis would spur the western powers, particularly the United States, to intervene in the crisis to halt nuclear escalation. In other words, it relied on what might be called "catalytic deterrence," whereby the presumed Western or U.S. interest in averting any nuclear use would compel them to become involved in a regional crisis. South African leaders apparently assumed that their small arsenal could not directly neutralize the arsenal of the former Soviet Union (Soviet-backed rebels in Angola and Mozambique constituted South Africa's major ex-

here is on the development of U.S. strategy, this discussion will concentrate on those security incentives that involve the United States or U.S. allies, keeping in mind that regional states may wish to acquire nuclear weapons because of security concerns that have little to do with the United States. In fact, the history of nuclear proliferation suggests that the United States is not the state of primary concern to most proliferating states, though this may change in the post–Cold War era if regional leaders view the United States as the only major power capable of interfering in their regional affairs.[3]

THREE OF THE ADVERSARY'S OBJECTIVES

As mentioned in the last chapter, regional states will likely use nuclear threats for political or strategic purposes to "shape" the conflict in such a way that they can prevail. To develop this idea a bit further, three specific objectives are discussed for threatening nuclear first use: (1) to deter U.S. intervention within the region, (2) to intimidate U.S. allies within the region, and (3) to ensure the survival of the state or regime from external threats, specifically, to prevent the United States from seeking unconditional surrender or the ouster of the leadership as the condition for an armistice.[4] These, then, are the three generic threats the United States needs to deter. It is important to distinguish between these three objectives because they have different implications for U.S. strategy—as will be seen shortly.

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ternal security threat). Therefore, they wanted to engage the interests of a larger nuclear power on their behalf.

[3]The Chinese nuclear weapon program may have been motivated by a concern with U.S. nuclear weapons (recall veiled U.S. nuclear threats to end the Korean War and to resolve the Quemoy-Matsu crisis). However, the focus of Chinese nuclear capability seems to have been directed against the former Soviet Union. India first acquired nuclear weapons to counter Chinese threats and later to counter Pakistani threats. Similarly, Pakistan acquired nuclear weapons because of the Indian threat; Israel acquired nuclear weapons to deter Arab conventional military threats and perhaps chemical or biological threats; and South Africa acquired nuclear weapons to counter regional states, some of whom were backed by the former Soviet Union.

[4]The *Bottom-Up Review* highlights only the first two threats discussed here: threats to deter U.S. intervention or to intimidate U.S. allies (Aspin, 1993, pp. 5 and 73). Missing from the *Bottom-Up Review* is an appreciation of how nuclear-armed regional adversaries can use nuclear threats to ensure the regime's survival or to constrain U.S. war aims more broadly. This is an important omission because the latter objective poses the most difficult challenge for U.S. strategy, as discussed below.

Deterring U.S. Intervention

The first, and perhaps most obvious, objective an opponent might have for threatening nuclear first use is to deter the United States from intervening in regional conflicts. This is perhaps what General K. Sundarji of the Indian army meant when he said that one of the lessons of the Gulf War was that states should acquire nuclear weapons before engaging the United States in a regional conflict (Quester and Utgoff, 1994a, p. 107; Aspin, 1992). Regional leaders may try to deter U.S. intervention by interfering with U.S. military operations or by simply raising the expected costs (i.e., casualties) associated with U.S. intervention. In this context, the principle targets for attack would be U.S. troops deployed on allied territory, ports of debarkation, airfields, command centers, naval forces at sea, and perhaps targets in the U.S. homeland—assuming the regional states have the capability to deliver weapons to the U.S. homeland.[5] Again, the threat to attack military facilities within a theater of operations is not for tactical purposes, but rather to convince U.S. leaders that the risks associated with projecting U.S. power are too great or that power projection would be too difficult or ineffective from more-remote bases located outside the range of nuclear threats, thereby dissuading U.S. intervention in the first place. Threatening targets in the U.S. homeland would be aimed at increasing the costs (e.g., civilian casualties) associated with U.S. intervention.

These points can be illustrated using a hypothetical conflict with North Korea. North Korea might wish to deter large-scale U.S. intervention in a future Korean war by threatening to inflict high casualties by attacking U.S. forces in the field or by threatening nuclear attacks against South Korean airfields or ports of debarkation critical to U.S. reinforcement operations. The hope would be that the prospect of 1,000 to 10,000 U.S. fatalities would be sufficient to deter a U.S. president from intervening in the conflict. Of course, the long-standing U.S. security commitment to South Korea, signified in part by U.S. troops deployed in the country, makes this example some-

[5]In the *Bottom-Up Review*, the threat posed by weapons of mass destruction is viewed principally in terms of increased casualties and the challenge posed to U.S. power projection operations. In this regard, the report cites possible targets, such as U.S. troop concentrations, regional airfields and ports critical to U.S. reinforcement operations, and U.S. cities. See Aspin (1993), p. 5.

what fanciful because it is hard to imagine the United States would renege on its security commitment under these circumstances. Threatening high casualties may be more effective when the U.S. commitment is less clear.

Another possibility is that the North Korean nuclear threat could force the United States to operate from bases out of range of the nuclear threat. Operating from remote bases could hamper the U.S. ability to help South Korean forces defend Seoul (the capture of which might be a limited North Korean political-military objective), and it could even hamper the defense of the entire peninsula. In this case, the North Korean objective would be to limit the effectiveness of U.S. power projection forces so North Korea can accomplish its political and military objectives more quickly despite the U.S. presence.

Finally, North Korean threats to "bring the war to the U.S. homeland" might give U.S. leaders pause to reflect on the wisdom of coming to the aid of South Korea in a future regional conflict, especially if U.S. leaders have little confidence in the U.S. ability to detect and intercept nontraditional means of delivery. Obviously, an assessment of North Korean nontraditional delivery capability is crucial to deciding whether or not this threat is serious.

Intimidating U.S. Regional Allies

A second objective for threatening nuclear first use is to intimidate U.S. allies. In particular, regional states may threaten to use nuclear weapons to coerce allies into denying overflight rights or basing rights to U.S. forces, to create fissures within an alliance or coalition arrayed against the regional state, or, ultimately, to split allies or coalition partners away from the United States so they remain neutral in an unfolding regional crisis. To this end, one can imagine emerging nuclear powers threatening allied forces, key military installations, and cities (especially the ally's capital) or other high-value targets. The focus of such threats is on allied decisionmaking, not on the United States—although it has the effect of hampering U.S. power-projection capabilities just as with the first generic threat. However, the objectives may be wider than simply interfering with U.S. power projection operations. Intimidating neighboring states

may also be useful for gaining concessions on other regional political, economic, and military issues.

Using North Korea again to illustrate this threat, the North could threaten nuclear attack, for example, against Seoul, to intimidate South Korea into severing its security alliance with the United States. Of course this would be tantamount to asking the South to capitulate to the North's demands, given the massive North Korean army. For this reason, this threat is likely to fail. Since South Korea's survival would be at stake, one would expect its leaders to take substantial risks to avert this potential loss.

Japan (or any other regional ally of the United States), on the other hand, is in a very different position. Since a Korean war does not threaten Japanese sovereignty, Japanese leaders are likely to be more risk-averse when contemplating involvement in a future Korean conflict. Hence, they are more vulnerable to coercion. For example, North Korea might threaten to attack Tokyo if Japan joined a U.S.-led coalition; if Japan did not remain neutral in the conflict and instead allowed U.S. forces to stage out of Japanese airfields and ports; or if Japan supplied coalition forces with war materials. Thus, the efficacy of North Korean nuclear threats to intimidate U.S. friends and allies depends on the allied stakes involved. If the ally's stakes are vital, nuclear coercion will likely fail. If not, the potential for coercion becomes a powerful tool emerging nuclear states can wield.

Limiting U.S. War Aims

A third objective regional powers may seek with nuclear threats is the protection of their regimes or states from total defeat should war occur. This intrawar deterrent objective is intended to thwart attempts to completely conquer the state or to impose unconditional surrender in an ongoing war. It is important to note that it is the opponent's perception of the threat to his survival that matters here since U.S. protestations to the effect that its intentions are benign with respect to the survival of the opponent's regime may fall on deaf ears. This means that an adversary may construe a threat to be regime threatening so as to limit U.S. freedom of action. In fact, the adversary could announce that U.S. regional intervention of any sort is regime threatening.

In this context, nuclear weapons become weapons of last resort—a last desperate roll of the dice to forestall the total defeat of the regime in the face of mounting U.S. military pressure. This threat emphasizes a role for nuclear weapons that is similar to the role played by NATO nuclear forces and may be similar to the rationale for the suspected covert nuclear arsenals of Israel, Pakistan, India, and, until recently, South Africa.

Nuclear threats to ensure the survival of the regime are very difficult to deter because, on the brink of collapse, the opponent has "nothing left to lose" by threatening nuclear escalation. In fact, under these circumstances, regional leaders essentially become "nondeterrable." Either way, the adversary faces the prospect of losing his hold on power—the ultimate value for many Third World regimes, especially totalitarian regimes. As discussed in the companion document, many leaders in this position are likely to take great risks to avert this loss (Watman and Wilkening, 1994, Chapters Two and Three). Launching a nuclear attack under these circumstances may appear suicidal to other states, but from the perspective of a leader near defeat, threatening to attack may be a risk worth taking if it represents the last hope for survival. Moreover, one cannot rule out the possibility that a regime on the brink of defeat might launch a nuclear attack out of pure revenge. Hence, the opponent's threat to use nuclear weapons first is credible. The purpose of a regional leader's nuclear threat would be to raise the prospect of sufficient pain to make the defeat of the regime not worth the costs. In this regard, the targets would likely be high-value assets, such as U.S. or allied cities (especially capitals). Note that, in this circumstance, the burden of the first move is on the United States, because U.S. leaders must continue to press the attack to topple the regime (or to achieve unconditional surrender) despite the opponent's nuclear threats. In short, nuclear weapons become important instruments for limiting U.S. or coalition war aims in the midst of a conflict and, in particular, for ensuring the survival of a state's regime.

Again, as a hypothetical example, imagine a second Korean war against a nuclear-armed North Korean regime. After initial losses to a North Korean conventional attack, it is quite plausible that U.S. and South Korean conventional forces would turn the tide of the war and start advancing north—similar to events in the fall of 1950. If Kim Jong Il believes, or convincingly acts as if he believes, that North

Korean forces are about to collapse, resulting in the total defeat of his regime, he might threaten to attack Seoul with nuclear weapons if U.S. or South Korean forces advance north of the 38th Parallel. Or, this threat might come as U.S. or South Korean forces advance on Pyongyang. Under these circumstances Kim's threat to escalate to nuclear attack is quite credible, even if actually carrying out the threat would be suicidal.

Kim Jong Il, in this scenario, is in a situation where he could easily believe he has little or nothing left to lose. Understanding that the Kim regime is being backed into a corner, the United States, South Korea, and any other allied powers would have to reconsider the attraction of reunifying the peninsula by force, given that serious damage could be inflicted on Seoul, Tokyo, and other cities within the region. Under these circumstances, South Korea would likely put tremendous pressure on the United States to halt the war prior to the collapse of the Kim regime to avert escalation.

As a related point, an opponent's nuclear weapons may undermine U.S. punishment threats directed at the opponent's regime. As discussed in the companion report, U.S. regional deterrence strategy should principally rely on conventional military threats to deny the adversary's war aims promptly (Watman and Wilkening, 1994, Chapter Five). Against hard-to-deter regimes, threats to punish the adversary may also be important to increase the chance that deterrence succeeds. Among the more impressive punishment threats are threats to undermine the regime's hold on power (i.e., threats against the leadership or critical support elements of the regime), as opposed to threats against the opponent's economic infrastructure. Nuclear weapons in the hands of regional adversaries undermine the U.S. ability to implement this punishment threat. For example, regional leaders could threaten to launch a nuclear attack if they are targeted or killed by U.S. conventional military actions.

On the other hand, one should note that, even though an opponent's nuclear weapons weaken U.S. punishment threats directed against the regime, this does not mean that deterrence by punishment will be ineffective under all circumstances. A lot depends on which side has the burden of making the first move; i.e., the game is one of brinkmanship. In those circumstances where the regional adversary must make the first move, a U.S. punishment strategy aimed at top-

pling the opponent's regime may still be effective. The fact that this threat is not perfectly credible—because the adversary can retaliate with nuclear weapons—does not render it completely ineffective. It is up to the regional adversary to test the credibility of the U.S. threat by acting first. Nevertheless, as a general proposition, nuclear weapons in the hands of regional opponents will limit the effectiveness of a U.S. punishment strategy aimed at undermining the regime's hold on power.

Chapter Three

U.S. MILITARY CAPABILITIES

Four military capabilities are important for addressing regional nuclear threats: (1) U.S. nuclear superiority, (2) active and passive defenses, (3) counterforce capabilities,[1] and (4) accurate and timely intelligence.[2] This report is primarily concerned with the strategic value of the first three military capabilities. Moreover, it does not address questions about whether these capabilities are technically achievable at the desired level of effectiveness or cost-effective in the face of an opponent's countermeasures. An adequate discussion of these issues would take us far afield from our current purpose. Obviously, such a debate must eventually occur to assess whether or not the strategies discussed below can actually be implemented. Thus, one may agree with the strategic value of certain military capabilities for deterrence, as discussed below, while at the same time not be sanguine about the U.S. ability to achieve the necessary effectiveness to make the strategy work. While opinions on the ease or difficulty of achieving specific capabilities abound, few systematic studies of these options have been conducted to date. Suffice it to say that the opinions one frequently hears often reflect attitudes shaped during the Cold War and, consequently, may not be relevant to future regional opponents.

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[1]Counterforce is defined here to be attacks against the opponent's nuclear forces (i.e., nuclear weapon production and storage sites, nuclear delivery systems, and nuclear command and control targets). Conventional or nuclear weapons could be used for such attacks.

[2]All four capabilities are highlighted in the Clinton administration's counterproliferation effort, as discussed in the *Bottom-Up Review* (Aspin, 1993, pp. 6, 10–11, and 73–74).

Before focusing on the first three military capabilities, one should note that effective intelligence is an extremely important national and military capability for dealing effectively with all facets of the counterproliferation problem. Good intelligence is crucial for determining whether or not an opponent possesses nuclear weapons (and if not, when it might acquire its first weapon), the number of weapons in its arsenal, the weapon design (e.g., first-generation fission bombs or more powerful boosted-fission and fusion bombs), the locations of nuclear weapon production and storage sites, the types of delivery vehicles, and the command and control arrangements for handling these precious assets—not to mention the identity of countries that are aiding the opponent's nuclear weapon program and the types of technology being transferred. This information is important for

- determining whether a threat exists (or when it might exist), as well as for assessing its magnitude
- determining the types and the required effectiveness of U.S. defenses
- determining targets for possible U.S. counterforce attacks and the impact of such attacks
- determining when an attack might be imminent (i.e., strategic and tactical warning)
- providing an understanding of the opponent's command and control system to inform U.S. leaders about the likelihood of accidental or unauthorized launches and the likely effect of U.S. attempts to destroy the communication links between the opponent's national command authority and its nuclear forces.

It is beyond the scope of the current study to treat intelligence requirements in any detail. Hence, it will not be discussed further.

NUCLEAR SUPERIORITY

Nuclear superiority is a capability the United States currently has, and always will have, unless the United States reduces its nuclear arsenal to the level of several hundred weapons. Nuclear superiority is important because it implies the United States has "escalation

dominance" (Kahn, 1965; and Nitze, 1977, pp. 122–124).[3] Escalation dominance refers to a situation in which the United States can retaliate to a nuclear attack by escalating to the same, or higher, "rungs of the escalation ladder," dominating the war at this higher level of violence. In this context, *to dominate* means that the United States can retaliate in such a way that the opponent will suffer greater destruction to targets comparable to the ones the opponent attacked, or where the scope of the war can be expanded in such a way that the opponent cannot retaliate in kind. For example, for every airfield a regional opponent threatens, the United States can threaten one or more airfields in retaliation. With a small arsenal of first-generation fission bombs, there are few military targets an adversary can threaten that the United States could not counter tenfold or a hundredfold, if desired—though one might worry about asymmetric vulnerabilities in each side's military operations.[4] In short, the strategy of escalation dominance seeks to convince the adversary that nuclear war would be unthinkable for the adversary but not necessarily for the United States.

This is not to say that, because the United States has nuclear superiority, U.S. retaliatory threats will involve all-out retaliation. The belief that deterrence implies a threat to completely destroy the opponent's society is a holdover from the U.S.-Soviet nuclear standoff during the Cold War. U.S. nuclear retaliatory threats against regional opponents can, and should, be much more nuanced than threatening the complete destruction of the opponent's country—a threat that is disproportionate and, hence, is likely to be less credible in any case. Finally, escalation dominance does not require U.S. threats to

[3]The idea of escalation dominance was incorporated into U.S. strategy vis-à-vis the former Soviet Union in the early 1950s—a time when the Soviet nuclear arsenal was still quite small compared to the rapidly expanding U.S. arsenal. When the former Soviet Union achieved essential equivalence or parity in nuclear capability on the strategic and theater levels, escalation dominance lost its credibility.

[4]One should examine whether U.S. power projection operations are particularly vulnerable to the loss of a few high-value ports—unlike the adversary, who likely will be a land power—or special scenarios, such as electromagnetic pulse attacks that cripple a regional adversary less than the United States because U.S. forces depend more on advanced electronics and extensive communication links. If asymmetric vulnerabilities are known to exist, tit-for-tat retaliatory threats probably will be ineffective for deterrence.

use nuclear weapons first. Therefore, this strategy should be quite credible.

The threat to escalate to nuclear counterforce second strikes, should the adversary cross the nuclear threshold first, is a particularly attractive U.S. retaliatory option because it is credible and has the benefit of limiting damage from subsequent attacks. Moreover, regional opponents will not be able to threaten counterforce attacks against U.S. nuclear forces in reprisal; i.e., they lack a tit-for-tat response. Finally, if regional opponents apply worst-case analysis, they will likely exaggerate the effectiveness of U.S. counterforce strikes, thereby enhancing their credibility. Therefore, regardless of whether or not U.S. planners believe U.S. nuclear counterforce attacks are effective for limiting damage, regional opponents are likely to believe that nuclear attacks against their nuclear forces are both proportionate and effective. Consequently, U.S. nuclear counterforce second strikes constitute a credible retaliatory option for deterrence.

Threatening nuclear retaliation against elements of the opponent's regime could be an escalation option of last resort.[5] For example, such threats may deter further attacks by regional adversaries after the initial U.S. retaliation (e.g., after U.S. counterforce second strikes). Under some circumstances, e.g., an opponent's threat to attack high-value U.S. or allied targets, such as cities, this threat may even be proportionate. In general, this threat should be credible, unless the only feasible retaliatory attacks against the regime require hundreds of warheads or threaten high collateral damage. The credibility is also diminished if the opponent retains the capability to inflict substantial pain on the United States or U.S. allies after absorbing a counter-leadership attack, as discussed before. Again, the name of the game is brinkmanship. The onus rests on the side that threatens to cross the countervalue or counterleadership threshold first. This is why counterleadership threats generally are credible only as a U.S. threat of last resort.

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[5]Threatening the opponent's regime in this context is not so much a "decapitation threat" intended to sever the command links between the leadership and its nuclear forces, thereby limiting damage to the United States, as it is a threat to harm what regional leaders value most: themselves and their hold on power. As such, it is the ultimate countervalue threat.

Despite the logical appeal of the argument that escalation dominance should provide credible U.S. retaliatory options to deter regional nuclear attacks, it is comforting to know there is evidence that some leaders actually think this way. Recent revelations about South Africa's nuclear doctrine indicate that South African leaders did not believe their small nuclear arsenal (containing six fission bombs with estimated yields between 10 and 18 kilotons) could credibly deter a Soviet-backed invasion of their homeland because the former Soviet Union had "nuclear escalation dominance" (the South African expression) over South Africa. As a result, South African leaders apparently developed a strategy of "catalytic deterrence" that relied on the belief that revelations concerning South Africa's nuclear capability in the midst of a crisis would force Western states, particularly the United States, to get involved to prevent nuclear escalation because of the presumed U.S. interest in maintaining the nuclear taboo. This involvement might have been diplomatic or, as South African leaders hoped, may have involved extending deterrence to South Africa to prevent a Soviet invasion in the first place (see Howlett and Simpson, 1993, pp. 156–159, and de Villiers, Jardine, and Reiss, 1993, pp. 100–101).[6]

Although most of this discussion is about deterring nuclear attacks, it is worth saying a word about chemical and biological deterrence. If escalation dominance is generally credible against nuclear threats, it may be less credible for chemical or biological threats. Here the United States lacks tit-for-tat retaliatory options because it no longer

[6]The South African strategy reputedly had three steps. First, in the early stages of a conflict, South Africa would reveal the presence of a secret nuclear test facility, hoping to raise concern in the West that a conflict might become nuclear. If this failed to induce the West to become involved diplomatically to halt the crisis, then South Africa would detonate one or more bombs at this test site, demonstrating that they did, in fact, have a nuclear capability. If this failed to draw a sufficient response, South African leaders would then reveal in private the presence of their arsenal to Western leaders, hoping that this would finally induce them to intervene to prevent nuclear escalation. Whether this strategy would have succeeded is debatable, since it depends on the extent to which the West believes that maintaining the nuclear taboo, absent other visible signs of commitment to South Africa (i.e., alliance guarantees, political ties, or economic interests), is so important that it is worth involvement in a nuclear crisis. Nevertheless, it does appear to be the rationale South Africa used to justify its arsenal. Moreover, it represents a interesting departure from traditional thinking on nuclear deterrence. For a longer discussion of the South African strategy, see Howlett and Simpson (1993).

has an offensive biological capability, and U.S. chemical capability will be eliminated within 10 years after the United States ratifies the Chemical Weapon Convention (signed on January 15, 1993). Whether U.S. nuclear retaliatory threats are credible for deterring biological and chemical threats depends, among other things, on whether credibility is tied to the type of weapon used or to the consequences of the initial attack. If it is tied to the type of weapon, nuclear retaliation, while not impossible, is less credible because it requires U.S. leaders to cross the nuclear threshold first. On the other hand, if biological or chemical weapons threaten thousands or tens of thousands of casualties (e.g., if used against unprotected civilian populations), nuclear retaliatory threats might be viewed as highly credible because the political and moral inhibitions against U.S. nuclear first use under these circumstances would likely evaporate, especially if U.S. nuclear retaliation is viewed as the only way to prevent further attacks. If chemical or biological threats are directed against U.S. troops that are protected to some extent with passive defenses, the expected casualties would be substantially lower—assuming adequate warning and relatively short exposure times. In this case, U.S. nuclear retaliatory threats would be less credible and conventional retaliatory threats would be preferable. Obviously, a U.S. declaratory policy of "no first use" of weapons of mass destruction leaves open the possibility that U.S. nuclear threats might be used to deter chemical or biological threats.

One final point on U.S. retaliatory options for deterrence. In the wake of Operation Desert Storm, there is a growing sentiment that U.S. deterrence strategy should rely entirely on conventional forces, given the apparent effectiveness of "smart" conventional munitions and advanced delivery platforms. Conventional escalation options could involve expanding the scope or intensity of a conventional conflict (e.g., expanding the target list to include targets previously held in sanctuary) or escalating the aims for which the war is being fought (e.g., the capture and trial of the enemy leadership for war crimes). Given the political and moral inhibitions against U.S. nuclear use, perhaps even in retaliation after an opponent has used nuclear weapons first, some observers prefer a U.S. policy that eschews nuclear use under any circumstances, leading ultimately to a policy that advocates the abolition of nuclear weapons among all states.

Leaving aside the question of conventional force effectiveness for the moment, there is little question that U.S. leaders would prefer an equally effective conventional option over a nuclear retaliatory option, if given the choice. At the very least, conventional retaliatory options, if they are effective, should be more credible than nuclear retaliatory options because U.S. leaders will be less inhibited about actually using them. However, this does not necessarily mean that U.S. leaders will be adverse to *threatening* nuclear retaliation to deter nuclear attacks, even if they believe the actual use of a nuclear weapon would be problematic—although, obviously, if the adversary believes U.S. leaders are bluffing, the threat loses credibility. As a general proposition, it is reasonable to assume that adversaries will find U.S. nuclear retaliatory threats credible once the United States has been threatened with nuclear attack.

Neither does a preference for conventional options imply that U.S. leaders will not rely on nuclear threats if effective conventional options are unavailable. Therefore, even with a preference for conventional options, nuclear options can and should be retained in U.S. strategy to deter nuclear threats to U.S. interests. In fact, to the extent U.S. leaders openly advocate sole reliance on conventional military capabilities for dealing with future regional conflicts and reject any use of nuclear retaliation even when confronted with nuclear provocations, they undermine the credibility of the U.S. deterrent posture because, invariably, there will be circumstances in which adequate conventional options are lacking. In fact, such advocacy encourages adversaries to probe for exactly these circumstances.

But the central question is whether conventional retaliatory threats will be as effective as nuclear threats, notwithstanding Operation Desert Storm. As a rule, conventional threats are less overwhelming and less clear in their desired effects (Watman and Wilkening, 1994, pp. 77–81). Hence, they make less compelling deterrent threats because too many imponderables obscure the opponent's view of the likely consequences or outcome of U.S. conventional attacks—unless considerable effort is made to clearly convey U.S. conventional capabilities *prior to the failure of deterrence.*[7] Moreover, many con-

[7]Note that many U.S. military planners were equally surprised by the performance of U.S. conventional forces in Operation Desert Storm, in terms not only of their destructiveness but also of the small number of U..S. casualties.

ventional threats will be costly to implement, both in terms of money and expected U.S. casualties and, hence, may be difficult for U.S. leaders to make convincingly. Obviously, substantial effort should be made to examine possible conventional escalation options that might deter the use of weapons of mass destruction. However, the perspective taken here is that the United States should not constrain itself to threaten only conventional escalation because this would unnecessarily restrict the effectiveness of U.S. deterrent strategies, at least at present.

DEFENSES

Active and passive defenses are the second general category of U.S. military capability that can be brought to bear against emerging nuclear powers. Active defenses must address all possible modes of delivery. Theater and homeland air and ballistic missile defenses are obvious candidates; however, the United States should also investigate options for intercepting nontraditional delivery. That problem largely reduces to having adequate intelligence regarding possible delivery modes, the timing of attacks, and methods for detecting the presence of nuclear weapons aboard otherwise benign delivery vehicles (e.g., merchant ships, civilian airliners, and trucks).

As a general proposition, the U.S. homeland is easier to defend than allied homelands because the attack timelines are longer and the intercontinental threat is smaller. Current U.S. continental air defenses, for example, should provide substantial defense against a small number of long-range aircraft. U.S. theater air defenses are also quite formidable, especially if the United States establishes air superiority. U.S. nationwide ballistic missile defenses should be easier to develop than theater ballistic missile defenses because of the smaller number of possible reentry vehicles (although this depends on the sophistication of an opponent's decoys), the long flight times, and the narrow "threat corridors" that afford more shoot-look-shoot opportunities for the defense (Shaver, 1994).

The most challenging defense problem is likely to be theater ballistic missile defense—in part, because so many regional states are acquiring theater ballistic missiles and, in part, because of the technical challenge posed by this threat. Multilayered defense architectures generally make theater defenses more effective (see Larsen and Kent,

1994; and Mesic, 1994a), and U.S. technological advantages may lead one to be optimistic about the U.S. ability to build interceptors with reasonably high single-shot kill probabilities (e.g., between 0.6 and 0.8). However, decoys will inevitably be a major problem and, along with the potential for early release of chemical or biological submunitions, will push U.S. architectures in the direction of boost-phase intercept—assuming this does not violate the Antiballistic Missile Treaty, or that suitable modifications to the treaty can be worked out with the Russians. Serious tests of highly effective theater ballistic missile defenses remain to be conducted. In the long run, the question of effective ballistic missile defenses will come down to an assessment of whether or not the United States can stay ahead in the measure-countermeasure competition against potential regional adversaries.[8]

Passive defenses are also an option for reducing the exposure of U.S. and allied troops, and civilian populations, to nuclear weapon effects. Passive measures for military forces involve dispersal and/or protective shelters so that a single nuclear weapon cannot destroy as much equipment or kill as many troops. Deploying troops in a nuclear-alerted posture can reduce the casualties from nuclear weapons by an order of magnitude, or more, depending on the amount of dispersal. Passive defenses can also be provided against the electromagnetic pulse, although it may be expensive to provide such protection for all general-purpose forces and their theater or tactical communication links.

Civil defenses (e.g., warning of an attack so civilians can take cover; blast or fallout shelters) can reduce substantially the casualties from an urban nuclear blast. Civil defenses are often thought to be ineffective, at least in the United States. However, this is a legacy of the Cold War civil defense debate. In the U.S.-Soviet context, civil

[8]While many believed the answer to this question was "no" in the context of a U.S. ballistic missile defense against a massive Soviet nuclear attack, the answer is less obvious here because of the asymmetry between U.S. defensive technology and a regional opponent's offensive missile technology. While even primitive offensive decoys may be difficult to discriminate, it is not obvious that the problem is insoluble. Such options as boost-phase intercept over the opponent's territory obviously have advantages in this regard. For a discussion of the theater missile defense debate spawned by the Patriot missile's performance during the Gulf War, see Postol (1991a,b) and Stein (1992).

defenses had to cope with attacks involving hundreds or thousands of thermonuclear weapons (with yields on the order of 100 to 1000 kilotons). One can easily come to the conclusion that civil defenses provide little protection in this context, but that they can offer substantial protection against attacks involving a few fission bombs (with yields on the order of 10 to 20 kilotons). Reopening the U.S. civil defense debate will not be politically popular. It raises questions about the possibility of nuclear attack that most leaders would rather leave dormant. However, if nuclear proliferation is as inevitable as many seem to think, and nuclear attacks on U.S. cities are an element of this threat, this debate should be revisited.

The challenge for U.S. strategy is to devise active and passive defenses that can substantially reduce the prospective costs from a nuclear attack.[9] Obviously, U.S. active and passive defenses cannot reduce the risks to the point they were at before an adversary developed nuclear weapons. However, they may reduce them enough so that an adversary cannot easily intimidate U.S. and allied leaders. While defenses work to reduce the prospective costs, U.S. retaliatory threats should reduce the likelihood that an adversary will cross the nuclear threshold in the first place.

COUNTERFORCE

The third element of U.S. military capability is counterforce. U.S. counterforce threats make credible retaliatory threats for escalation dominance, as discussed above, as well as being an element of a damage-limiting strategy much like defenses. The major political drawback with counterforce for damage limitation is that it requires preemption to be effective. The decision to preempt will be very difficult for U.S. and allied leaders. If the United States waits, the opponent's nuclear weapons may be dispersed and, hence, much

[9]Chemical and biological attacks against U.S. troops can also be blunted with active and passive defenses. However, for civilian populations, active defense may be the only practical approach because of the difficulty in disseminating vaccines, antibiotics, gas masks, and other protective gear in a timely manner without inducing hysteria. Israel has managed to implement some civil defenses against these threats; however, its experience may not be readily transferable to the United States because of the size of Israel's population and because Israeli citizens are accustomed to having military preparations intrude on civilian life in a way that Americans are not.

more difficult to target. Or they may be launched. Clearly, this argues for conventional U.S. counterforce capabilities because they do not require a U.S. president to cross the nuclear threshold first. However, effective conventional counterforce may be difficult to achieve (Mesic, 1994b). On the other hand, if counterforce attacks are to blunt follow-on attacks after an opponent's initial nuclear use (or after chemical or biological first use), nuclear counterforce options may become politically feasible for U.S. leaders. One problem with waiting until the opponent has used nuclear weapons first, aside from the damage suffered in the initial attack, is that, at this point, most of the opponent's nuclear weapons will be dispersed and difficult to locate.

Counterforce attacks also raise concerns about collateral damage because nuclear materials (or chemicals and biological toxins) from the destroyed weapons, storage sites, or production facilities may be dispersed over a wide area by the U.S. attack. This concern will be particularly acute if the United States attacks the opponent's weapons of mass destruction first. If the opponent uses nuclear weapons first, the blame for collateral damage may be laid at the opponent's feet. Fallout from U.S. retaliatory strikes may be a problem, particularly if it drifts over the territory of U.S. allies. On the other hand, since almost all targets for nuclear attack will be soft, fallout may be manageable because U.S. weapons will not need to be detonated close to the ground.

Traditionally, counterforce capabilities have been criticized on strategic grounds because they increase first-strike and arms-race instability.[10] In the U.S.-Soviet context, preemptive counterforce capabilities were thought to be crisis destabilizing because they created pressures to attack preemptively before one's vulnerable forces were destroyed. However, it is not the survival of one's forces per se that motivates one side to preempt as much as the survival of one's country that drives one to attack the opponent's vulnerable forces preemptively. In other words, the mutual fear of surprise attack arises not because it is better to use one's nuclear forces before one loses them but because by using them first one can potentially improve

[10]See, for example, Wilkening (1994), Wilkening and Watman (1986), Kent and Thayer (1989), Rathjens (1969), and Schelling (1960).

one's chances for survival by destroying a significant fraction of the opponent's nuclear force.

This distinction is important for understanding the extent to which U.S. counterforce capabilities create crisis instability with regional nuclear powers. In regional conflicts, the United States is the only country that can hope to acquire effective counterforce capabilities. Regional powers cannot improve their chances for survival by attacking the United States first because they cannot preemptively destroy the U.S. nuclear arsenal. Hence, they are unlikely to preempt. Looked at another way, if the opponent contemplates preemptive attack, against which targets would they send their weapons? They could send them against allied cities or perhaps against the U.S. homeland. However, doing so would be suicidal because the United States still holds the opponent's state or regime hostage. Hence, regional adversaries will not have much incentive to launch their nuclear weapons out from under a U.S. counterforce attack.

The key to the success of a U.S. counterforce strategy is to convince the adversary that it still has something left to lose after its nuclear forces are destroyed. If a regional opponent believes it will be defenseless in the wake of a U.S. counterforce attack, and that it is only a matter of time before the regime collapses, it may preempt in the belief that there is nothing left to lose. Hence, to be successful, U.S. leaders must convince regional opponents that their regimes will remain intact, or at least that they will not be dismembered to the extent they would be if they launched their nuclear weapons.

If this can be accomplished, one implication is that U.S. counterforce attacks may be conducted over time; i.e., a U.S. counterforce campaign may last days or weeks instead of the 15-to-30 minute counterforce surprise attacks often discussed in the U.S.-Soviet Cold War context. The extra time should make U.S. counterforce campaigns more effective.

One might still wonder whether a leader in these circumstances would attack simply to inflict pain on the United States, even if this guarantees his destruction. To guard against possible intentional or unauthorized attacks during a U.S. conventional counterforce campaign, the United States should back up its counterforce capabilities

with active and passive defenses that are effective at least for the duration of the campaign.

A second criticism of counterforce is that it stimulates arms races. In particular, the vulnerable side is pressured to take countervailing actions to improve the survival of its forces. Provoking an arms race with a major power is frequently counterproductive because the ensuing action-reaction spiral is costly and often does not enhance the security of the country deploying the initial counterforce capability. This argument had merit in the U.S.-Soviet context, although people argued that the costs of the ensuing competition would hurt the former Soviet Union more than the United States. However, the argument has less force when applied to the competition between the United States and various Third World states. The disparity in technological and economic resources is so great that the United States can probably ignore the arms-race implications of its counterforce capability. Of course, this gross generalization must be tempered by the fact that some regional adversaries have modest cadres of technically sophisticated scientists and engineers and by the fact that some measure-countermeasure competitions inherently favor the attacker (e.g., the competition between reentry vehicle decoys and discrimination capabilities for ballistic missile defense), implying that the marginal cost ratio associated with the competition would be in the opponent's favor. Even so, the United States might still be able to engage in the competition without incurring economic hardships.

Therefore, two of the classic Cold War arguments against counterforce, that it is first-strike and arms-race destabilizing, have less merit when viewed in the context of U.S. counterforce capabilities against emerging nuclear powers. Hence, there are fewer strategic reasons to oppose conventional counterforce capabilities for preemptive attacks and nuclear second-strike counterforce capabilities as part of a damage-limiting strategy against emerging nuclear powers. U.S. second-strike nuclear counterforce options should be pursued in any case as credible retaliatory options for escalation dominance, as discussed above, regardless of their damage-limiting effectiveness.

Chapter Four

AN OUTLINE OF U.S. STRATEGIES

Using the three generic strategic objectives adversaries might have for making nuclear threats—to deter U.S. regional intervention, to intimidate U.S. allies, and to prevent the complete defeat of their states or regimes—and the three generic military capabilities discussed above—escalation dominance, active and passive defenses, and counterforce capabilities—one can now construct the outlines of effective U.S. strategies for deterring or denying nuclear first use by regional opponents. Since the strategy varies depending on the opponent's objective, each generic threat will be discussed in turn.

OPPONENT'S OBJECTIVE: DETER U.S. INTERVENTION

Of the three objectives, nuclear threats to dissuade the United States from intervening in a regional conflict should be relatively easy to deter because a U.S. deterrent strategy based on escalation dominance should be quite credible. An opponent's nuclear threats against U.S. troops, ports of debarkation, or airfields within the theater of operation may require the United States to deploy forces into the region in a nuclear-alerted posture, thus making deployment slower and more ponderous. On the other hand, the overwhelming U.S. capability to threaten the opponent's conventional military forces in retaliation will create similar problems for the adversary.[1] If the opponent's objective is to shape the battlefield at the operational

[1]Given that most opponents will have greater difficulty maintaining effective command and control over dispersed forces than will the United States, this could be a net advantage to the United States.

level using nuclear threats, the United States can reshape the battlefield to its advantage using a much wider and more powerful set of nuclear threats. If the opponent actually uses nuclear weapons against U.S. forces, U.S. nuclear retaliation should be able to reestablish U.S. dominance at the tactical and operational levels—although one might worry about such threats as high-altitude electromagnetic pulse. This may require larger U.S. retaliatory strikes than the adversary's initial attack, but this does not necessarily render U.S. retaliatory threats incredible (unless the number of weapons required is many times greater than the opponent's initial attack or the anticipated collateral damage is deemed to be disproportionate).

Because the United States will have overwhelming nuclear superiority against regional adversaries, U.S. retaliatory threats can be directed against other targets besides the opponent's conventional military forces. Nuclear counterforce threats are among the most credible U.S. escalation options, as discussed in Chapter Three. U.S. planners may not have confidence that U.S. counterforce attacks would actually destroy a significant portion of the adversary's remaining nuclear arsenal. However, from the opponent's perspective, such attacks may appear very threatening. Therefore, U.S. nuclear counterforce options should make effective escalatory threats.

Ultimately, threats against the opponent's regime will be among the most potent U.S. escalatory threats. In response to an opponent's threat to use nuclear weapons first, the United States could threaten to attack the regime's hold on power (i.e., its security forces, elite units of the military, and perhaps the leadership itself). As discussed in Chapter Three, this threat is a last resort. If the United States can limit damage from subsequent attacks after the opponent's regime has been attacked, then this retaliatory option becomes highly credible.

Nuclear threats against the U.S. homeland are perhaps the easiest to deter because such threats engage U.S. interests directly. Few regional leaders would question a U.S. president's willingness to respond if a nuclear detonation occurred on U.S. soil. U.S. retaliation in this case would be swift and devastating—most likely against the opponent's regime.

Although U.S. retaliatory threats reduce the likelihood of an opponent's attack, they do little to reduce the potential costs associated with the opponent's threat. U.S. leaders may intervene, despite the potential costs, under the assumption that the chance that the opponent actually will attack is low because of the U.S. deterrent. However, if U.S. leaders do not completely trust deterrence, or if they are concerned about accidental or unauthorized attacks, the United States has few options other than to take protective measures (i.e., the acquisition of active and passive defenses and effective counterforce capabilities) to reduce these prospective costs. Defenses are preferred over counterforce because they do not require the decision to launch preemptive attacks. For example, current U.S. theater air defenses should foreclose air attacks as an effective means of delivery, with the possible exception of stealthy cruise missile attacks. Theater ballistic missile attacks remain the most pernicious threat because of the extent to which ballistic missiles are proliferating, and because no effective theater missile defense currently exists. Similarly, if the opponent has the capability to threaten the U.S. homeland, nationwide air and ballistic missile defenses become important.

In terms of passive defenses, civil defenses can reduce the casualties from a nuclear attack against populated areas, assuming adequate warning, and dispersed operations should go a long way toward reducing the risks to U.S. troops. Or, the United States could deploy its forces to bases out of range of possible nuclear threats. Operating U.S. power-projection forces from a greater distance or from a more dispersed posture on land reduces their vulnerability. On the other hand, this makes logistics operations more complex. It is a matter for further analysis to decide if U.S. power projection operations could still be effective from a dispersed posture. Such a posture would require changes in current U.S. operations, although the challenge may not be insurmountable. If it turns out that operating U.S. forces in a dispersed manner critically limits their effectiveness, the opponent may be able to dissuade U.S. intervention by convincing risk-averse U.S. leaders that U.S. forces cannot successfully defend U.S. interests under the presence of nuclear threats.

In summary, if regional opponents threaten nuclear attacks to dissuade the United States from intervening in regional conflicts, U.S. strategy should emphasize escalation dominance to deter the oppo-

nent fr[illegible]he nuclear threshold first and active and passive defenses to minimize the prospective costs if the opponent actually attacks. U.S. escalation options should be quite credible under these circumstances and, in general, will be very effective in reversing any strategic or operational advantage an opponent believes he can achieve. If the prospective costs are the dominant concern of U.S. leaders, active and passive defenses become key elements in U.S. strategy. Nuclear threats to the U.S. homeland should be the easiest to deter because U.S. retaliatory threats are highly credible in this situation—although, again, active and passive (i.e., civil) defenses are important for reducing the prospective costs. If U.S. retaliatory threats reduce the likelihood that an opponent will attack and if U.S. defenses reduce the cost if he attacks, U.S. military strategy will reduce the expected costs associated with U.S. intervention and, hence, undermine the opponent's ability to deter U.S. intervention, as depicted in Figure 1 on page 4.

OPPONENT'S OBJECTIVE: INTIMIDATE U.S. ALLIES

The second objective for an opponent's nuclear threats is to intimidate U.S. allies. In particular, a regional nuclear power may interfere with U.S. power-projection operations by coercing allies into denying overflight rights, basing rights, or other aid to U.S. power-projection forces, or it might threaten U.S. allies to create fissures in an existing alliance or coalition.[2] The focus of these threats would be the allied leadership and not that of the United States. The targets for attack would be located in the ally's homeland, e.g., allied troops, military facilities, or perhaps even cities.

To deter nuclear threats against U.S. allies, the United States should extend deterrence using escalation dominance. If threats are made against allied ports, airfields, or cities, the United States can threaten to retaliate against the attacker's military facilities or cities on behalf of the ally.[3] A U.S. strategy of extended deterrence should be credible

[2]The Iraqi Scud attacks against Israel during the 1991 Gulf War are an interesting example of how threats against a third party might be used to draw it into a war, thereby creating problems for a U.S.-led coalition.

[3]If an adversary has already conquered some allied territory, U.S. nuclear attacks against forces located on allied territory may be politically infeasible. Even if U.S.

if the U.S. commitment to the threatened ally is strong and clearly communicated. U.S. troops deployed on allied soil are a classic way to communicate this commitment. In addition, U.S. nuclear superiority enhances the credibility of U.S. extended deterrence threats because of the asymmetry in capability. Finally, extended deterrence will be particularly credible if the U.S. homeland is invulnerable to attack because then the United States can threaten to escalate with impunity.[4]

In the early stages of a regional adversary's nuclear weapon program, the U.S. homeland will be relatively invulnerable because these states typically lack intercontinental delivery means, with the possible exception of nontraditional delivery. However, if a regional nuclear program goes unchecked, one would expect the United States eventually to become vulnerable. In that case, the risks to the United States increase substantially. Even so, U.S. retaliatory threats should make it unlikely that a regional opponent will ever attack the U.S. homeland. Beyond this, some mix of counterforce capabilities and active and passive homeland defenses would further reduce the risks to the United States. Defensive options to ensure U.S. homeland invulnerability are preferred because they do not rely on preemption. Besides continental air and ballistic missile defenses, the United

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weapons are airburst to minimize fallout, most allied nations will probably resist such threats unless the survival of their state is at risk.

[4]This was not true of NATO nuclear strategy during most of the Cold War. The threat to escalate to nuclear first use within Europe appeared highly credible only so long as the U.S. homeland was invulnerable to Soviet retaliatory attacks. This was true in the early 1950s. However, once the Soviet Union developed intercontinental-range nuclear forces in the late 1950s, the credibility of U.S. first use was undermined. The self-deterring character of nuclear first use in this context was captured rhetorically by De Gaulle when he asked whether the United States would risk the loss of New York to save Paris. If not, the U.S. threat to escalate was less credible (i.e., not credible in De Gaulle's mind). Within NATO, this debate was resolved by arguing that Soviet leaders could never be sure the United States would not escalate, even if escalation appeared irrational. Hence, NATO strategy throughout most of the Cold War relied on "a threat that left something to chance." This same dilemma would face the United States if regional adversaries had the capability to strike the U.S. homeland with weapons of mass destruction (although the level of destruction they could inflict would be much less than was the case with the former Soviet Union), with the important distinction that, in NATO strategy, the United States threatened to use nuclear weapons first and, in regional deterrence, the opponent is the one having to cross the nuclear threshold first.

States should seriously reexamine the efficacy of rudimentary civil defenses as a backup, despite the unpopularity of this idea.

A related problem is the vulnerability of the U.S. ally's country. Regional allies may believe that escalation dominance is credible so long as the U.S. homeland is relatively invulnerable and that extended deterrence will reduce the likelihood of a nuclear attack substantially. However, if the war escalates, their homelands are still vulnerable. Hence, U.S. allies, or coalition partners, may become nervous in the midst of a crisis despite U.S. nuclear guarantees. This tension between deterrence and reassurance also arose in the NATO nuclear debate (Howard, 1982). However, this tension was exacerbated in the NATO context because NATO strategy relied on U.S. threats to use nuclear weapons first if conventional defenses failed—a move that might have left much of Europe engulfed in a nuclear battlefield. The fact that U.S. extended deterrence threats no longer need to rely on nuclear first use should alleviate allied concerns. Nevertheless, reassurance will still be an important dimension of U.S. alliance-building strategy.[5]

To reassure U.S. allies, counterforce capabilities and active and passive theater defenses become important to limit damage to allied homelands. Again, defenses are the preferred means, because they do not require preemptive attacks. In fact, one of the most important functions for U.S. theater defenses will be to ease the tension between deterrence and reassurance. Ultimately, if U.S. theater ballistic missile and theater air defenses are highly effective, the United States becomes one of the most attractive partners or allies to have in a regional crisis involving a nuclear-armed opponent.

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[5]In the NATO nuclear debate, the concept of "shared risk" (i.e., that each NATO member had to share the risk of nuclear attack) was an important part of reassurance, precisely because the alliance relied on a strategy that advocated NATO nuclear first use. If NATO was going to threaten nuclear war to deter Soviet attack, it made sense that no alliance member should be able to avoid the consequences of that decision, especially if that state had a large role in initiating the nuclear strike (e.g., the United States). If the United States was invulnerable to Soviet retaliatory strikes, the fear was that U.S. leaders might advocate nuclear first use without fully considering the consequences for their West European allies. In this sense, the concept of shared risk was in direct tension with the credibility of U.S. extended deterrent threats because the latter argues for U.S. homeland invulnerability. In the regional context, U.S. first use is not required, easing the requirement for shared risk as a part of reassurance.

How effective theater defenses have to be to achieve these benefits is open to debate. The degree of protection required to reassure U.S. allies depends on the risk-taking propensities of that ally. This, in turn, depends on the interests a particular ally has at stake in a regional conflict. If these stakes are marginal, allied leaders will want highly effective defenses because even a small risk of nuclear attack may be too much. On the other hand, if the ally's interests are vital (e.g., the survival of the state), allied leaders will presumably be willing to take greater risks in the face of an opponent's nuclear threats. In the latter case, they may be willing to accept U.S. extended deterrence guarantees without any defensive protection. The same is not necessarily true for other U.S. regional allies involved in the conflict, as the example in Chapter Two of Japanese involvement in a possible future conflict with a nuclear-armed North Korea makes clear.

In summary, a U.S. strategy of escalation dominance backed up with active and passive defenses should deter the use of nuclear weapons against U.S. allies and friends. Again, counterforce threats may be among the most compelling U.S. escalatory threats, with threats against the opponent's regime withheld as the ultimate countervalue threat. For extended deterrence, defenses play a more important role than they did in deterring threats aimed at dissuading the United States from intervening in a regional crisis: U.S. homeland defenses enhance the credibility of U.S. escalatory threats, and theater defenses help reassure U.S. allies that standing up to a nuclear-armed regional opponent will not necessarily end in disaster.

OPPONENT'S OBJECTIVE: ENSURE REGIME SURVIVAL

A third objective regional adversaries have for threatening nuclear first use is to ensure the survival of the state or the regime against total defeat, demands for unconditional surrender, or even actions that increase unacceptably the chance that the regime will lose power. Even if the avowed U.S. intention is not to overthrow the regime, there is ample room for misperceiving U.S. intentions, since this calculation is made from the adversary's perspective. Adversaries that threaten nuclear attack for this reason will be particularly difficult to deter because they feel they have nothing left to lose—or will make a point of acting as if this were true. U.S. threats to hold an opponent's

regime at risk if it crosses the nuclear threshold will be ineffective in this case because the regime is already being threatened with destruction. Therefore, under these circumstances, the United States essentially has two choices: Avoid placing regional opponents in this position, or abandon deterrence in favor of strategies that emphasize damage limitation. The United States can try to avoid placing adversaries in a position in which they believe they have nothing left to lose by fighting wars for "limited aims." Thus, the United States would avoid unconditional surrender or the ouster of the opponent's regime as explicit war aims.

Adopting a limited-aims strategy may seem like a reasonable approach for the United States. However, a serious drawback, apart from the question of whether the adversary actually believes U.S. war aims are limited, is that this approach creates a strong incentive for regional states to acquire nuclear weapons. If leaders believe that nuclear weapons help ensure the survival of their regimes, particularly against U.S. or coalition threats, nuclear weapons become very attractive to have.

If the United States wants to avoid this proliferation incentive, few military options are available other than shifting away from retaliatory deterrence toward a strategy based on highly effective damage limitation. That is, the United States would need to develop highly effective conventional counterforce capabilities as well as highly effective defenses to protect itself and its allies from nuclear attack. Note that conventional counterforce is required here because the United States will need to preempt against the opponent's nuclear forces before the nuclear threshold is crossed. In these circumstances, U.S. declaratory policy should emphasize the limited nature of U.S. war aims to provide the opponent with the maximum possible incentive to refrain from escalating to nuclear attacks early in a conflict—although this may be difficult to accomplish. Unconditional surrender would be invoked as a U.S. war aim only if the opponent uses nuclear weapons first.

From the foregoing discussion, it should be clear that the adversary has every incentive to keep his nuclear weapon program covert. Not only does this avoid political problems with U.S. and international pressure to stop the program in peacetime, but it also makes the problem of targeting the nascent arsenal more difficult in war.

Presumably, this is why most proliferation programs are covert. Ultimately, if regional states believe they can deploy nuclear weapons in a survivable manner so that U.S. counterforce attacks are ineffective and if the United States and its allies have no effective defenses against nuclear attack, it will be very difficult to dissuade regional states from acquiring such weapons to ensure the survival of their regimes from external threats.

Figure 3 summarizes the discussion up to this point. This matrix illustrates the relative emphasis across the different military capabilities for U.S. strategies designed to deter or deny each of the three generic nuclear threats listed on the left-hand side of the matrix. While all three capabilities may be desirable for each threat, the darker cells indicate capabilities that should receive greater emphasis. To deter nuclear threats aimed at discouraging U.S. intervention or intimidating U.S. allies, U.S. strategy should rely on escalation dominance as the basic retaliatory threat and on active and passive defenses to reduce potential U.S. and allied costs (e.g., expected ca-

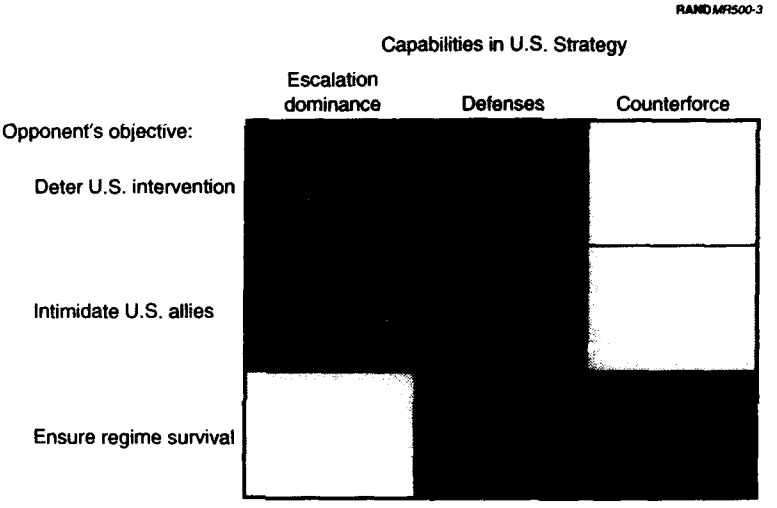

Figure 3—Emphasis in U.S. Strategy

sualties), with somewhat greater emphasis on defenses for extended deterrence. U.S. nuclear counterforce capabilities are also useful since they constitute a particularly credible U.S. escalation option, quite apart from their effectiveness for limiting damage.

The emphasis in U.S. strategy changes if an adversary uses nuclear threats to ensure its survival. An adversary's nuclear threat to forestall the regime's loss of political power will be very difficult to deter with retaliatory threats alone. The motive for an adversary's threat may be pure vengeance, but it will be virtually impossible to deter if the opponent's leadership truly believes it has nothing left to lose. As a consequence, the preferred U.S. strategy shifts away from an emphasis on retaliatory deterrence toward a strategy based on highly effective damage limitation, as illustrated in Figure 3. In this case, the dominant pillars of U.S. strategy are defenses and conventional counterforce capabilities. Retaliatory threats serve only to dissuade regional leaders from escalating while the United States conducts its conventional counterforce campaign. While such damage-limiting capabilities were thought to create crisis and arms-race instabilities in the U.S.–Soviet context, these problems should be less severe with respect to Third World nuclear powers.

Chapter Five

IMPLICATIONS FOR U.S. COUNTERPROLIFERATION STRATEGY

The focus of this discussion has been on deterring a regional adversary's use of nuclear weapons in a regional crisis. However, a successful U.S. deterrence or denial strategy may also help discourage nuclear proliferation in the first place, even if that is not its primary purpose. If the United States acquires all three military capabilities, i.e., escalation dominance (which it already has), active and passive defenses (some of which are currently or readily available), and counterforce capabilities, especially conventional counterforce (which is not currently available and may be difficult to achieve), the political and military utility of a regional adversary's nuclear arsenal will be substantially reduced. This is particularly true if the United States develops highly effective damage-limiting options. Conventional counterforce capabilities that focus on the early destruction of an adversary's nuclear arsenal may convince regional leaders that their nuclear weapons will become lightning rods for preemptive U.S. attacks, as opposed to means to enhance their security. Moreover, effective theater defenses will increase the number of states that want to ally themselves with the United States.

Assuming the Non-Proliferation Treaty regime is still in effect in the future, if not strengthened, nuclear proliferators will face considerable international political pressure to persuade them to forgo the nuclear option. Political isolation and economic sanctions may raise the costs to regional states of acquiring nuclear weapons, not to mention the direct economic and opportunity costs associated with the nuclear weapon program itself. U.S. military capabilities to render an opponent's nuclear weapons ineffective—at least for threatening the United States and U.S. allies—would add to this

proliferation disincentive. True, some proliferation incentives will remain because regional adversaries may wish to acquire nuclear weapons to deal with other regional security concerns or to enhance the prestige of the regime. However, regional opponents will have to ask themselves whether nuclear weapons are worth the investment, given the political, economic, and military downsides associated with their acquisition. If regional leaders answer this question in the negative, in part because the United States acquires the capabilities mentioned above, U.S. strategy will have helped discourage the proliferation of nuclear weapons, in addition to deterring or defeating their use in a crisis. In fact, this strategy represents a new dimension to U.S. nonproliferation policy—an approach that traditionally has focused on increasing the costs to the opponent of nuclear proliferation through export controls and diplomatic pressure as opposed to reducing the benefits of nuclear possession.[1]

In this way, the elements of a U.S. counterproliferation strategy begin to emerge. Nuclear first use in many contexts can be deterred by the threat of escalation dominance. Theater and U.S. homeland defenses (both active and passive) enhance the credibility of extended deterrence and reduce U.S. and allied exposure to the potential costs associated with conflicts involving a nuclear-armed opponent. Effective U.S. conventional counterforce capabilities also help limit damage, if the political will exists to use them preemptively. Finally, U.S. damage-limiting capabilities may discourage the opponent from acquiring nuclear weapons in the first place.

If these U.S. military capabilities are deemed too difficult to achieve (at the desired level of effectiveness), regional adversaries have an incentive to acquire nuclear weapons, especially to ensure the survival of their regimes from external threats. The implications of failing to construct an adequate U.S. strategy to deter or deny regional nuclear use is that the United States must then rely solely on diplomatic mechanisms (e.g., the Non-Proliferation Treaty, export controls) to prevent the spread of nuclear weapons. If nonproliferation efforts fail, as seems likely given recent experiences with Iraq and North Korea, and the United States is unable to mount an effective deter-

[1]Quester and Utgoff (1994b) also emphasize the benefits for U.S. nonproliferation policy of reducing the advantages, as well as raising the costs, of nuclear acquisition.

rence and denial strategy, the United States must learn to live in a world with more nuclear powers, albeit small ones, and must adjust its foreign policy so that regional involvements occur only when the most important U.S. interests are at stake.

Appendix

DETERRENCE VERSUS COMPELLENCE

Threats can be used to dissuade an opponent from taking some proscribed action (deterrence), or to coerce an opponent into stopping an ongoing activity or reversing an action already taken (compellence). Deterrence is more passive than compellence, with threats made in advance and carried out only if the other side acts. The initiative is in the hands of the opponent; i.e., deterrent threats are ideally constructed so that the opponent recognizes that only he has the "last clear chance" to avoid retaliation by avoiding the proscribed action. Compellence, on the other hand, is more active, requiring the compeller to initiate some form of pressure after the other side has acted that is applied until compliance is achieved. The objective is to change ongoing behavior, not to discourage it from happening in the first place. Deterrence and compellence differ with respect to whose initiative is put to the test. A minefield is the archetypal deterrent, dissuading someone from crossing a boundary by threatening consequences that, in this case, are automatic if he enters the field and trips a mine; a blockade is the archetypal compellent action, i.e., constant pressure that inflicts costs on an opponent until compliance is achieved.

Thomas Schelling was one of the first writers to discuss the distinction between deterrent and compellent threats in the strategic literature (Schelling, 1966, pp. 69–91). As he pointed out, compellent threats have important differences from deterrent threats. For example,

- Compellent threats usually have a finite duration, whereas deterrent threats can exist for an indefinite time.

- Assurances that the compellent pressure will be lifted if the adversary complies are more important, and more problematic, for successful compellent threats than they are for deterrent threats.
- Compellent threats have to be specific with respect to what action will bring about the end of the compellent pressure, as well as how much compellent pressure is sufficient to be successful without provoking an escalatory response from the other side.
- Verifying compliance so that compellent threats can be lifted is generally more difficult than verifying that a proscribed action has not occurred.
- Successful compellence often inflicts greater costs on the adversary for backing down because compliance involves open submission to the compeller; with deterrence, leaders can pretend they never intended to act (i.e., states have plausible denial in deterrent situations but not in compellent situations), thereby saving face for political leaders.

These distinctions between deterrence and compellence are important for two reasons. First, unless the United States acts quickly to deter an act, regional crises will frequently involve actions in progress that the United States wishes to halt or *faits accomplis* that the United States wants to reverse. Moreover, the slow political decisionmaking process in democracies implies that many conventional acts of aggression may already be under way before U.S. decisionmakers decide how to respond. The fact that future U.S. regional involvements will increasingly involve coalitions only exacerbates this problem. Thus, regional conflicts will frequently require compellent threats.

Second, successful compellence is widely believed to be more difficult than successful deterrence. The plausibility of this assumption rests on the belief that, having undertaken or accomplished some action, an opponent will be more reluctant to reverse himself than he would be to avoid taking the action in the first place. Several arguments make this assumption seem plausible. First, taking an action demonstrates a level of commitment that is absent before the action is taken. Second, having committed to an action, leaders are reluctant to back down because this could adversely affect their domestic and international reputations. Third, if an action has been taken,

reestablishing the *status quo ante* represents a loss relative to the new reference frame of the actor. Hence, one would expect the actor to take greater risks to avert this loss than he might take to seize the objective in the first place. If he is willing to take greater risks to avert a loss than to achieve a gain, he will be harder to compel than he would be to deter, all other things being equal.

With respect to nuclear threats, the United States is interested more in deterrence than compellence. Hence, this report does not systematically examine strategies for compellence. Compellence, on the other hand, likely will be a principal preoccupation for the application of conventional force. Conventional compellent strategies should be the subject of further research given its likely future importance in U.S. regional security strategy.

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